

EFFECT OF PROJECT-BASED LEARNING ON ACADEMIC ACHIEVEMENT IN ENGLISH LANGUAGE: EVIDENCE FROM PUBLIC SECONDARY SCHOOLS IN ANAMBRA STATE

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Abstract

Students' academic achievement in English Language has continued to be a major concern in Nigeria due to the low achievement of students in internal and external examinations. Therefore, this study examined the effect of Project-Based Learning (PBL) approach on the academic achievement of students in English Language among public secondary schools in Anambra State. Specifically, a quasi-experimental design was employed for the study. It was a pretest-posttest equivalent group design. The total population of the study comprised 19,042 Senior Secondary School II (SS2) students. A total of 294 students was selected from the total population of SS2 students through a multi-stage sampling procedure to ensure adequate representation and balance of gender. The instrument of data collection was a validated instrument known as the English Language Achievement Test (ELAT), which was found to be reliable after a trial test that reported a reliability index of 0.84. Analysis of the data was conducted through the application of mean, standard deviation, and Analysis of Covariance at 0.05 levels of significance. The findings revealed that the Project-Based Learning approach had a positive effect on the academic achievement of students in English Language, as students who used the PBL approach performed better than their counterparts who used the conventional approach. Moreover, gender and the interaction of the two methods and gender had no effect on the academic achievement of the students. This implies that PBL is beneficial for both genders and leads to active engagement and effective learning experiences for students. The conclusion of the study is that the application of the Project-Based Learning approach is an effective strategy for enhancing students' academic achievement in English Language. The study recommends that English Language teachers, curriculum planners, and education policymakers in Nigeria integrate PBL strategies in their work to improve students' achievement in Nigerian secondary schools.

Keywords: Project-Based Learning (PBL), academic achievement, English language, gender, secondary school students, instructional strategy

Introduction

In recent years, the recurring problem of low academic achievement in English Language among secondary school students in Nigeria has elicited a lot of concern from educators, curriculum planners, and policy makers (WAEC, 2023). As a core course and a pre-requisite for any further academic advancement, English Language assumes a fundamental place in Nigeria's education system. Apart from being an examinable course, it is also the medium of instruction for all levels of education in Nigeria; thus, it has a critical role to play in the overall academic success of students and Nigeria's socio-economic and cultural development at large (Okonkwo & Alika, 2021). English Language

proficiency provides students with the fundamental communication, literacy, and cognitive abilities they need to function in both local and global settings.

In spite of its importance, students' achievement in English Language in national and external examinations, including the West African Senior School Certificate Examination (WASSCE) and Joint Admissions and Matriculation Board (JAMB), has been consistently low (WAEC, 2023). Reports have shown that students are facing serious challenges in areas such as reading comprehension, grammar use, vocabulary development, and written expression, leading to low achievement outcomes and limited opportunities for academic progression (Li et al., 2024). This has brought forth critical concerns about the prevailing pedagogical practices. Two main constructs are relevant in this context: academic achievement and instructional approach. Academic achievement refers to students' achievement outcomes, which are usually measured by their achievement in tests, continuous assessment, and other evaluation tools, including standardized tests and examinations, in subjects like English Language (Okonkwo et al., 2018). Achievement, apart from being measured by students' test scores, is related to cognitive skills, including critical thinking, problem-solving, and the ability to apply what has been learned, including their ability to apply their knowledge of English Language meaningfully (Greene et al., 2018; Rohde & Thompson, 2017). Achievement is not only related to what is learned but also how it is processed, retained, and used by learners.

In the English Language field of study, academic achievement is a multifaceted concept that involves the acquisition of competence in the four main aspects of the English Language. These aspects are listening, speaking, reading, and writing. To achieve competence in these areas of English Language acquisition, students must be engaged in an active process of practice and feedback. However, research indicates that students are unable to achieve competence in English Language acquisition due to the lack of effectiveness of traditional approaches used by teachers. These approaches are mainly teacher-centered and do not provide students with the connection of English Language acquisition with practical applications. However, one of the most influential factors in the challenge is the prevalence of traditional approaches to instruction, which place more emphasis on the content of the material rather than the engagement of the learners. This is because, in such approaches, the learners are not viewed as co-learners in the process, but rather as receivers of the content. This results in shallow knowledge and poor retention of the material (Ogugua & Eze, 2020). In addition, the intangible and rule-based nature of some of the concepts in the English Language, such as grammar and composition, makes them hard for the learners.

In order to overcome the limitations, the current trend in educational research recommends learner-centric learning strategies that encourage learners' participation, collaboration, and learning in contexts. One such learning strategy is Project-Based Learning (PBL), which has emerged as an important learning strategy for achieving academic success and learner engagement (Chen & Yang, 2019). PBL is a learner-centric learning strategy where learners are engaged in learning complex tasks, which help them develop knowledge and learning skills through learning, collaboration, and problem-solving. Project-Based Learning is underpinned by the constructivist theory, which asserts that knowledge is constructed by the learner through experiences and social interactions (Kizkapan & Bektas, 2017). In Project-Based Learning, students undertake meaningful tasks like writing reports, creating presentations, carrying out interviews, or creating works of art, which require the use of integrated language skills. Project-Based Learning

not only develops linguistic proficiency in the learner but also promotes critical thinking, creativity, communication, and cooperation (Poonpon, 2011).

There is empirical evidence that strongly supports the effectiveness of Project-Based Learning in language education. For example, in one study, Baş (2011) found that Project-Based Learning significantly enhanced the academic achievement and attitudes of students learning English compared to those using the traditional approach. In another study, Ali & Hasan (2022) found that Project-Based Learning significantly enhanced the vocabulary acquisition and language proficiency of the participants. In another related study, Asrul et al. (2021) found that Project-Based Learning significantly enhanced the writing proficiency of the participants, especially in the composition of narrative texts. In a related study, Chen & Yang (2019), through a meta-analysis, found that Project-Based Learning has a statistically significant effect on the academic achievement of the students, regardless of the subject area. Besides improving student outcomes, PBL also boosts students' motivational and engagement levels through the provision of real-life experiences and the integration of schoolwork and real-life contexts (Artini & Nitiasih, 2017). The collaborative approach of PBL also helps to build students' confidence as they communicate and interact with their peers. Furthermore, PBL is effective in differentiated instruction as students of different abilities can contribute to the projects based on their strengths (Kholis & Aziz, 2020). Despite these proven advantages of PBL, its application in Nigerian secondary schools remains low, especially in the teaching of English Language. For instance, inadequate teacher training and resource availability, as well as the large number of students and the emphasis on exam-driven instruction, remain major barriers to the effective application of PBL in Nigeria's secondary schools. Furthermore, there is a lack of empirical studies on the effectiveness of PBL in improving students' achievement in English Language in Nigeria's Anambra State.

Guiding theories of this present study are two theories of learning and motivation: the Attribution Theory of Heider (1958) and the Experiential Learning Theory of Kolb (1984). These two theories complement each other to present a comprehensive picture of how students develop their motivation for learning and how they engage in the process of learning to improve their academic achievement in English Language. The Attribution Theory of Heider (1958) provides an explanation of the psychological aspects of the learner's perception of success and failure, while the Experiential Learning Theory of Kolb (1984) provides an explanation of the process of knowledge and skill acquisition.

Attribution theory, proposed by Heider (1958), asserts that people have a need to explain the causes of their successes and failures and that these causal attributions have a strong impact on their motivation, behavior, and subsequent achievement. According to attribution theory, learners explain their academic success or failure in terms of either internal factors such as ability and effort or external factors such as difficulty of the tasks or conditions of the instruction. One of the fundamental principles of attribution theory is that students who attribute success to factors they can control, such as their own efforts, are more likely to show persistence and resistance to frustration in their learning activities than those who attribute failure to factors they cannot control, such as their own ability.

In the English Language learning process, Attribution Theory underlines the need to build students' belief systems. In the process of English Language learning, students may face various challenges such as mastering grammatical rules, building their vocabulary base, and enhancing their communicative competence. When students believe that these challenges are achievable through practice and dedication, they will be motivated to participate in the learning process. On the other hand, if students attribute

their inability to achieve in areas such as reading comprehension and writing essays to their lack of ability, it will affect their motivation levels.

One of the major components of Attribution Theory is the difference between stable and unstable attributions of success or failure in achievement. Stable attributions, such as intelligence or ability, are likely to lead to a clear idea of how a person might perform in the future, while unstable attributions, such as effort and strategies of learning, leave room for improvement. In the context of English Language learning, it has been found that those who blame their achievement on a lack of effort are more likely to increase their interest and develop more effective learning strategies than those who blame their achievement on a lack of ability. Moreover, Attribution Theory acknowledges the emotional effects of the attributional beliefs of the learner. Pride, self-confidence, feelings of frustration, or anxiety, among others, are strongly related to the learner's perception of the outcomes of their academic achievement. In the case of the teaching of the English Language, good achievement in activities like oral presentations, comprehension exercises, or creative writing, among others, may boost the self-confidence of the learner when attributed to effort. Conversely, poor achievement attributed to factors outside the learner's control may evoke feelings of anxiety. By developing good attributional styles, the teacher can boost the self-confidence of the learner, thus promoting interest and, ultimately, academic achievement in the English Language.

Nevertheless, although the Attribution Theory offers a good account of the motivational and perceptual aspects of the learner, it does not offer any significant insights into the actual processes of knowledge and skill acquisition. The need for this theory, therefore, makes it imperative that the Experiential Learning Theory, as advanced by Kolb (1984), is introduced as another relevant theory.

Experiential Learning Theory, advanced by Kolb (1984), defines the concept of learning as a cyclical process consisting of four major elements, which include concrete experience, reflective observation, abstract conceptualization, and active experimentation. The theory, therefore, suggests that for learning to take place, the learner must take an active part in the experiences, observations, conceptualization, and experimentation of the knowledge. In this regard, the theory offers a good account of the shift in the perception of the learning process from the passive reception of knowledge to the active construction of knowledge, which makes it relevant for the Project-Based Learning approach. In the context of English Language, Experiential Learning Theory defines how students become proficient in the subject by participating actively in tasks. In project-based learning, students are engaged in activities such as debating, preparing written reports, participating in role plays, or participating in group projects. These activities are considered real-life situations where students practice their listening, speaking, reading, and writing skills. By reflective observation, students assess their activities, identify challenges, and receive feedback, thus improving their comprehension of how best to use the English Language.

The abstract conceptualization stage helps learners derive general principles from their experiences, including grammatical, communication, and writing skills. Finally, through active experimentation, students are able to apply their comprehension, thus improving their learning through practice. This cycle not only improves their proficiency in the English Language but also their critical thinking, cooperation, and problem-solving skills, all of which are essential for academic achievement in English Language. The relevance of Experiential Learning Theory to this study is its focus on engagement, context, and skills integration. Unlike conventional teacher-centered methods, which emphasize memorization, experiential learning aims for a deeper level of understanding

and memory retention by making learning contextually relevant. This is highly consistent with project-based learning, where students are engaged, do, and apply what they know within authentic contexts.

The integration of Attribution Theory and Experiential Learning Theory provides a comprehensive perspective on how project-based learning contributes to academic achievement in English Language Learning. Attribution Theory shows how students' perceptions of success and failure drive their motivation, whereas Experiential Learning Theory shows how students' engagement in meaningful learning experiences promotes skills acquisition and knowledge construction. These two theories, when integrated, emphasize how learning is a psychological and experiential phenomenon. In the framework of this present study, these theories imply that for students to achieve academically in their English Language Learning, not only should they be involved in experiential learning experiences but also attributional patterns should be encouraged for their motivation and academic achievement to improve. Project-Based Learning could then be defined as an approach to instruction that offers students experiential learning and attributional patterns at the same time for their academic achievement in English Language to improve.

Hence, it is in this context that this study finds its background. The aim of this study is to examine the effect of the project-based learning approach on the academic achievement of students in the English Language among secondary school students in Anambra State, Nigeria. The rationale for this study is informed by the idea that the use of the project-based approach, unlike the conventional teacher-centered approach, can positively impact the academic achievement of students. The results of this study will offer valuable insights into how the education of the English Language can be improved in Nigeria.

Hypotheses

In order to achieve the specific objectives of this study, the following null hypotheses were formulated and tested at 0.05 level of significance to guide the study;

- Ho₁:** There is no significant difference in the mean academic achievement of students in English Language when taught using the Project-Based Learning (PBL) approach and when taught without the PBL approach.
- Ho₂:** There is no significant difference in the mean academic achievement of male and female students in English Language when taught using the Project-Based Learning (PBL) approach and when taught without the PBL approach.
- Ho₃:** There is no significant interaction effect between the Project-Based Learning (PBL) approach on male and female academic achievement in English Language among secondary school students in Anambra State.

Method

The research design used was a quasi-experimental research design, specifically a pretest-posttest equivalent group design. This design was considered appropriate and relevant, as it enabled the researcher to study the effect of Project-Based Learning on students' academic achievement in English Language without using randomization, as this was not possible under actual classroom situations. The use of a quasi-experimental design was considered appropriate, as it offered a useful framework for making a comparison between two groups, namely, the experimental group and the control group, thus allowing a valid estimation of the effect of the instructional intervention on academic achievement.

The experimental group was taught English Language using Project-Based Learning strategies, where students were engaged in collaborative activities, real-life projects, and problem-solving activities related to the use of the English Language. In contrast, the control group was instructed using the conventional teacher-centered approach, which focuses on lectures and a lack of interaction with students. The dependent variable of the students' academic achievements was measured using a standardized test procedure carried out before and after the intervention, thus allowing for both within-group and between-group analysis of the results (Maqbool et al., 2023; Charkhtab et al., 2024).

Anambra State was chosen for the research because it is located in the South-East geopolitical zone of Nigeria. Anambra State is bordered by Delta State to the west, Imo and Abia States to the south, Enugu State to the east, and Kogi State to the north. The capital of Anambra State is Awka, while Onitsha is a major commercial city known for its large population and high level of economic activities. The state is also characterized by a strong emphasis on education, with a high concentration of public secondary schools located across the state. English Language is a compulsory course and the medium of instruction in all schools within the state, making it a critical component of students' academic success. In terms of administration, Anambra State has been divided into six education zones, namely, Aguata, Awka, Nnewi, Ogidi, Onitsha, and Otuocha, making it easier for all activities within the education sector to be supervised and coordinated appropriately. Despite all these structural strengths, records from Anambra State Post Primary Schools Service Commission (ASPPSSC, 2024) indicate low achievement by students in public secondary schools across the state in English Language, hence the need for innovative methods of instruction, including Project-Based Learning.

The population for the study comprised 19,042 Senior Secondary School Two (SS2) students from 267 public secondary schools in Anambra State, of whom 8,444 were males and 10,598 were females (ASPPSSC, 2024). From this population of SS2 students, a total of 294 SS2 students were sampled for the study. The sampling procedure for the study followed a multi-stage procedure to ensure representativeness and to avoid sampling biases. The sampling procedure involved three stages. In the first stage, one public secondary school was selected from each of the six education zones in the state using simple random sampling. A list of all public secondary schools in each education zone was obtained from the State Ministry of Education and served as the sampling frame. Through simple random sampling, one school was selected from each education zone, resulting in six schools for the study. This procedure ensured that every public secondary school within each education zone had an equal chance of being selected. In the second stage, purposive sampling was used to identify Senior Secondary School Two (SS2) students in the selected schools. The SS2 students were purposively chosen because they possessed the characteristics required for the study and were considered suitable participants for providing the needed data. In the third stage, simple random sampling was employed to select the required number of participants from the identified SS2 students in each selected school. The selection was carried out proportionately according to the population of SS2 students in each school to ensure fair representation. Through this procedure, a total of 294 students were selected and used for the study. The instrument of data collection was the English Language Achievement Test (ELAT), which is a researcher-developed test and a curriculum-based test meant to measure the academic achievement of students in the subject of English Language. It was developed in line with the Senior Secondary School Syllabus for English Language of the Nigerian Educational Research and Development Council (NERDC). It has 40 multiple-choice questions covering four major areas of the

language: vocabulary, grammar, comprehension, and writing/sentence structures. There are 10 questions under each of the areas. It was meant to test different cognitive levels of knowledge, understanding, application, and synthesizing. Each correct response was allocated a point, making the maximum marks attainable by a respondent 40. It was administered as a pretest and a posttest to assess the knowledge of the students before and after the instructional intervention.

The validity of the instrument was also ensured through face and content validity. To ensure adequate coverage of the content areas and instructional objectives specified in the Senior Secondary School English Language curriculum, a Table of Specification (Test Blueprint) was developed by the researcher. The Table of Specification served as a guide for the construction of the test items by relating the content areas to the cognitive levels of learning. The instrument, together with the Table of Specification, was submitted to three experts for validation. The experts examined the test items in terms of relevance, clarity, appropriateness of content coverage, suitability of the cognitive levels assessed, and alignment with the objectives of the study. The observations, corrections, and suggestions made by the experts were incorporated into the final version of the instrument. This process ensured that the test items adequately represented the content and learning outcomes intended to be measured, thereby establishing the content validity of the English Language Achievement Test (ELAT). The reliability of the instrument was established through a trial test conducted among 30 students in SS2 in Enugu State, which is not the area of interest but has similar characteristics. Cronbach Alpha reliability analysis established the reliability of the instrument, and the reliability coefficient of 0.84 is within the acceptable range. This proves that the instrument is highly reliable in measuring academic achievement in the English Language.

The entire process of collecting the required data for the experiment involved the following procedures: Pretest and Posttest. Before the experiment began, the researcher sought permission from the Department of Educational Foundations to obtain an official letter of introduction. This letter of introduction was then presented to the principals of the selected schools to seek permission to carry out the experiment. Informed consent was also obtained from the participants. The pretest was then conducted for both the experimental and control groups to assess their baseline equivalence. The experimental group then received teaching through the Project-Based Learning strategy for the specified period, while the control group received the conventional lecture method of teaching. The posttest was then conducted for both groups to assess the changes in their academic achievement. In order to control for extraneous variables, several steps were taken. Experimental bias was reduced by using research assistants who were adequately trained to carry out their tasks. Variables related to teachers were controlled by providing all teachers with uniform lesson plans and training them adequately on how to present their content to the students. Variables related to the participants, such as age, academic level, and exposure, were controlled by selecting students from one class level, namely SS2. Finally, pretest scores were statistically controlled during data analysis. The data was analyzed using descriptive and inferential statistics. The results were obtained by using mean scores and standard deviations, whereas Analysis of Covariance was used to test the null hypotheses at a 0.05 level of significance. Analysis of Covariance was used because it takes into account the differences between students' pretest scores, providing a better estimate of how Project-Based Learning influences students' academic achievement in English Language.

Results

Table 1: Descriptive Statistics of Students' Academic Achievement in English Language

Variable	Group	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
Achievement (Pretest)	Experimental (PBL)	147	10.00	28.00	18.42	4.31	0.102	0.200	-0.315	0.398
Achievement (Posttest)	Experimental (PBL)	147	18.00	38.00	27.86	5.12	-0.118	0.200	-0.241	0.398
Achievement (Pretest)	Control (Non-PBL)	147	9.00	27.00	18.36	4.28	0.134	0.200	-0.298	0.398
Achievement (Posttest)	Control (Non-PBL)	147	14.00	32.00	22.41	4.97	-0.092	0.200	-0.267	0.398
Valid N (listwise)	294									

Source: Researchers' Field Data

The descriptive results shown in Table 1 indicated the minimum, maximum, mean, standard deviation, skewness, and kurtosis of the experimental and control groups' students' academic achievements in English Language. In terms of pretest results, the experimental group showed a mean of 18.42 (SD = 4.31), while the control group showed a slightly similar mean of 18.36 (SD = 4.28). These results indicated that both groups were equivalent in terms of their academic achievements before the intervention. However, the results of the posttests showed a significant difference between the experimental and control groups' results. The experimental group, who were exposed to the PBL approach, showed a higher mean score of 27.86 (SD = 5.12), while the control group showed a lower mean score of 22.41 (SD = 4.97). These results indicated that the students who were exposed to the PBL approach showed higher academic achievements compared to those who were exposed to the conventional method.

The fact that the standard deviations were not too high for any of the groups implied that the scores were consistent around the mean. In addition, the skewness and kurtosis for the pretest and posttest scores were very close to zero, which implied that the data were normally distributed, thus ready for inferential analysis. Overall, the results indicated that the Project-Based Learning approach significantly impacted the academic achievement of the students in the subject of English Language. The results showed that the students who were taught using the Project-Based Learning approach showed greater improvement compared to those who were taught using the traditional method.

Table 2: Summary of ANCOVA Results on the Effects of Project-Based Learning on Students' Academic Achievement in English Language.

Hypothesis	Dependent Variable	Source	df	F	Sig.	Partial η^2
H ₁	Achievement	Pretest Achievement (Covariate)	1, 291	25.20	.000	.080
		Instructional Method (PBL vs Non-PBL)	1, 291	67.08	.000	.187

Hypothesis	Dependent Variable	Source	df	F	Sig.	Partial η^2
H ₂	Achievement (by Gender)	Pretest Achievement (Covariate)	1, 291	25.24	.000	.080
		Gender	1, 291	0.96	.334	.003
H ₃	Achievement (PBL Group Only)	Pretest Achievement (Covariate)	1, 99	19.26	.000	.070
		Gender	1, 99	0.65	.421	.004
H ₄	Achievement (Interaction)	Pretest Achievement (Covariate)	1, 290	24.88	.000	.079
		Instructional Method	1, 290	66.47	.000	.187
		Gender	1, 290	0.94	.334	.003
		Method $\times$ Gender	1, 290	0.60	.439	.002

df = degrees of freedom; η^2 = eta squared

All tests were conducted at the 0.05 level of significance

The ANCOVA findings, as presented in Table 2, showed that Project-Based Learning had a significant positive effect on students' academic achievement in English Language, controlling for students' pretest scores. Specifically, it was found that there was a significant main effect for method on students' achievement, $F = 67.08$, $p < 0.001$, with a moderate effect size, partial $\eta^2 = 0.187$, suggesting that the method, or rather the use of PBL, had a considerable impact on students' academic achievement. It was further found that the covariate, students' achievement on the pretest, was significant across all models, $p < 0.001$, suggesting that students' prior knowledge had a significant effect on their achievement on the posttest. Finally, it was found that gender had no significant effect on students' academic achievement, $p > 0.05$, as suggested by very low effect sizes, as all partial η^2 values were close to zero.

Moreover, the interaction effect of the instructional method and gender was not statistically significant, as the F-value was 0.60 and the p-value was 0.439. This proved that the effectiveness of the Project-Based Learning instructional method did not depend on the gender of the students. Both male and female students were able to benefit equally from the instructional strategy. The findings of the present study proved that the Project-Based Learning instructional strategy is an effective way of enhancing the academic achievement of the students in the English Language, regardless of the gender of the students.

Discussion

The first hypothesis, which claimed that Project-Based Learning (PBL) would not have a significant effect on the students' academic achievement in the subject of English Language, was rejected. This is because the ANCOVA analysis revealed a significant main effect for the instructional method (PBL and non-PBL) on the students' academic achievement, $F(1, 291) = 67.08$, $p < 0.001$, partial $\eta^2 = 0.187$. This means that the students who were exposed to the Project-Based Learning method had higher academic achievement compared to the students who were exposed to the conventional teaching method. This finding, therefore, reveals that Project-Based Learning improves students' academic achievement because it engages students in learning, especially through the practical application of their learning in real-life situations, where students will be required

to use their language skills. This means that students will be able to learn more, think, and remember their knowledge. This finding also corroborates the study done by Yang et al. (2025), where it was revealed that PBL improves students' academic achievement and their learning motivation for English language learning through their engagement in the learning activity. In addition, the study done by Shahzad & Panhwar (2025) revealed that students who learned using the project-based instructional strategy showed significant achievement scores compared to students who learned using the conventional method. From the theoretical perspective, the Experiential Learning Theory (Kolb, 1984) explains this study's findings, where students learn through experiences, especially the practical application of their learning, which is part of the PBL activity.

The second hypothesis, which stated that there would be no significant difference in the academic achievement of male and female students in the subject of English Language when taught through PBL and non-PBL approaches, was accepted. This is because the ANCOVA analysis revealed that there is no significant main effect of gender on the academic achievement of the students, $F(1, 291) = 0.96$, $p = 0.334$, partial $\eta^2 = 0.003$. This implies that the gender of the students has no impact on the academic achievement of the students in the English Language course, regardless of the instructional method. The effectiveness of the instruction is not necessarily linked to the gender of the learners. A possible reason for this is the fact that the PBL method promotes an all-inclusive and all-participatory classroom setting. In the PBL context, both male and female students have equal opportunities to participate in the collaborative tasks. This is in line with the findings of Chukueggu and Excelokoye (2025), who noted that gender did not have a significant impact on the academic achievement of students when they were presented with project-based and cooperative learning strategies. Similar observations were noted by Hao et al. (2024), who noted that there were only minor gender differences in terms of academic outcomes when student-based approaches such as PBL were used. Moreover, the findings of this study can be supported by the application of the Attribution Theory as noted by Heider (1958), which indicates that both male and female students may develop similar motivational and academic outcomes when they attribute their academic success to their efforts and effective learning strategies and not to gender-based expectations.

The third hypothesis, which stated that there would be no significant difference in the academic achievement of male and female students who experienced the Project-Based Learning approach, was accepted. The ANCOVA results revealed that there was no significant effect of gender in the PBL group, $F(1,99) = 0.65$, $p = 0.421$, partial $\eta^2 = 0.004$. This finding reveals that the effectiveness of the Project-Based Learning method is the same for both male and female students. This is possible because the PBL method is based on collaboration and active participation, which is not exclusive to males or females. In the PBL classroom setting, the students work together in mixed groups and interact with each other, thereby eliminating the achievement gaps in males and females. This finding is supported by the work of Udu and Viashima (2024), which revealed that students who were taught through the project-based strategy had the same achievement levels regardless of their gender. Yang et al. (2025) argued that the PBL method promotes fairness in the achievement of the students by focusing on their engagement and development of skills rather than competition. In the context of Experiential Learning Theory, both males and females benefit equally from the cycle of experience and application.

The fourth hypothesis, which was that there will be no significant interaction effect on the students' academic achievement in English Language between the Project-Based

Learning approach and gender, was accepted. The ANCOVA analysis showed that the interaction effect on the students' academic achievement in English Language between the instructional method and gender was not significant, $F(1, 290) = 0.60$, $p = 0.439$, partial $\eta^2 = 0.002$. This indicates that the effectiveness of the Project-Based Learning method on students' academic achievement does not rely on gender considerations. Male and female students were able to enjoy the benefits of this method of instruction equally. This could be attributed to the fact that PBL is based on universal learning processes, including problem-solving, cooperation, and authentic language use, which are all effective for all learners regardless of their gender. This is consistent with Shahzad and Panhawar's study (2025), which revealed no significant interaction between method of instruction and gender on students' academic achievement in English. This study is further supported by Hao et al. (2024), which revealed that the effect of PBL on learning outcomes was consistent across all genders. From a theoretical perspective, Attribution Theory reveals that academic achievement is independent of gender when learners attribute their success to effort and strategy use. Experiential Learning Theory further reveals that all learners are able to enjoy the benefits of experiential learning regardless of their differences.

Conclusion

Based on the findings of the study, it was concluded that Project-Based Learning (PBL) is an effective instructional approach for improving students' academic achievement and mastery of English Language concepts. The study also concluded that gender has no significant influence on students' academic achievement in English Language, and that both male and female students benefit equally from the use of Project-Based Learning. Furthermore, the interaction effect of Project-Based Learning and gender was not significant. Therefore, Project-Based Learning is an effective and gender-friendly instructional approach for enhancing students' achievement in English Language.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. English Language teachers should adopt Project-Based Learning in classroom instruction since it was found to significantly improve students' academic achievement in English Language.
2. Teachers should provide students with opportunities to engage in project-based activities, collaborative tasks, and practical learning experiences, as these were found to enhance students' mastery and understanding of English Language concepts.
3. Since Project-Based Learning was found to be effective for both male and female students, teachers should employ the approach without gender bias, ensuring equal participation and learning opportunities for all students.
4. School administrators should encourage and support the use of Project-Based Learning in English Language classrooms because of its positive effect on students' academic achievement.

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