

Research Article

Effects of Applying Problem Based Learning (PBL) Strategy Use on Students' Oral Grammar as One Aspect of Speaking Performance

Fekadu Adam Jeldu^{1,*} , Zeleke Teshome Lucha², Jira Jabessa¹

¹Department of English Language and Literature, Wallaga University, Nekemte, Ethiopia

²Department of Development Communication, English Language and Literature Ethiopian Civil Service University, Addis Ababa, Ethiopia

Abstract

The general aim of this study was examining the effects of PBL as Learning Strategy Use in enhancing the students' oral grammar as one aspect speaking skills in EFL class, grade 11 students in focus.. There were two research groups: the experimental (treatment) and comparison groups. The study was conducted in Biftu Nekemte Secondary School (BNSS). The population of the study included all grade 11th students who enrolled in 2014/2022 academic year. The current study comprised a non-randomized pre-test, post-test comparison group design as a kind of quasi-experimental research. The researcher employed multi-stage sampling technique. The number of students participated in the study were 48 in experimental group and 49 in comparison group. Pre and posttest instrument was adopted from Brown (2004)'s speaking performance rubric. Indeed, the researcher adapted only the grammar section of the rubric. Series of statistical operations were employed to compute the quantitative section of the study. Descriptive statistics tools of pretest and posttest groups were calculated to check whether data received is parametric or not. Besides, independent t-tests were run. Equally important, Cohen's Kappa (for inter-rater reliability) and Cohen's D (Effect Size) were run as well. It was concluded that applying problem based learning as learning strategy use improves EFL learners' oral grammar skills as one aspect of speaking skills significantly. Thus, a number of stake holders are recommended to consider the use of PBL as learning strategy in EFL class, particularly, for oral grammar teaching and learning.

Keywords

Oral Grammar, Speaking Performance, PBL, Learning Strategy, Effect

1. Introduction

1.1. Background of the Study

The importance of oral proficiency in any language cannot be overemphasized including oral grammar. To this point,

Palmer [37] notes that spoken language is the pupils' primary way of communicating and forms a crucial part of their language learning process. To communicate is to send and receive comprehensible information, process the information and evaluate their knowledge. It is through communication skills that they

*Correspondence: Fekadu Adam Jeldu (fekedeadam@gmail.com)

Received: 22 December 2025; **Accepted:** 20 January 2026; **Published:** 31 January 2026



Copyright: © The Author(s), 2026. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

develop more advanced language skills which consist of oral grammar usage [44, 49]. As an international language, English has become an important language in the world. It is spoken and learned by all nations. In this era of globalization, the mastery of speaking skill, in line with, oral grammar, is a huge asset in the increasingly local and global workplace. Nowadays, the majority of English users can be found in countries where the language is employed as a foreign or second language [8, 26, 42].

From the above authors' ideas, it is possible to understand that effective use of English as a second language (ESL) or foreign language (EFL) in oral communication is, without a doubt, one of the most common, activities people need to learn for their interpersonal communication speaking skills in general and oral grammar in particular.

According to Zeleke and Alemthesay [51], as part of the globalized world, the status of English in Ethiopia has been capitalized upon increasingly in recent years. Though English plays an important role in Ethiopian commerce, communication system and technology, its role in the country's education is paramount. Based on the 1994 Education and Training Policy of Ethiopia, English is taught as a compulsory subject in primary schools (grades one to eight). In some regions, English is even introduced as a medium of instruction in grades seven and eight. More importantly, English serves as a medium of instruction (MOI) in secondary (grades nine to twelve) and tertiary (university) levels of education. In the Ethiopian educational context, therefore, it is possible to say that success in academia is determined by the learners' mastery of English. Thus, to meet the demands of the global and local importance of English, particularly, oral grammar, the implementation of sound and effective instructional learning strategies are unquestionable. Therefore, new and innovative instructional strategies like problem based learning strategy (PBL hereafter) may solve this problem.

1.2. Statement of the Problem

In Ethiopian context, Dufera [16] declares that the Ethiopian educational policy and implementation strategies encourage learner-centered active pedagogy, cooperative learning, development of critical thinking and problem-solving skills. Yet it is surprising to witness a teacher-dominated pedagogy is a norm in the vast majority of classrooms observed. The traditional lecture method dominates the instructional process in general and students' engagement in particular.

It is known that the old syllabus, teacher-centered method of teaching (the talk-and-chalk method of teaching), has been improved and replaced by a new one that facilitates the communicative approach which is a student-centered method of teaching. In the current researcher's view, the student-centered method of teaching is not practical in EFL class despite, Ethiopian ministry of Education's [34] claim-which propagates the implementation of the student-centered

method of teaching in schools in general, and EFL classroom in particular. However, this wrong claim could be one of causes of English language poor performance including poor oral grammar.

To be more specific, even though it has been about a long period, since the communicative approach of teaching a language was introduced in Ethiopia, the teaching and learning of oral grammar in the country still follows the traditional method of teaching which is teacher-centered. In most cases, it remained to be the teaching of language rules instead of language uses. As a result, the entire teaching activities especially that of oral grammar failed to be effective. Thus, learners at all levels of education in the country experience deficiency of oral grammar usage. In support of this claim, Tadele [48] and Awol [1] point out that the English language national examinations in Ethiopia focus on the written grammar of the language, the teachers and students do not focus on developing the speaking skills, including oral grammar. Hence, students' level of oral grammar is found to be poor, and teachers use mostly the traditional lecture method in conducting classes. As a result, when students join university, they go with a poor background in their speaking skills, particularly in oral grammar skills. This becomes a drawback to their academic progress at the first year level. As they are not trained for the demands of the tertiary level of education, most of the students experience problems in using their oral grammar for their academic purpose. Worst of all, Dejene [14] forwarded that the quality of English language teaching (ELT) in Ethiopia needs improvement as it is characterized by traditional teaching methods and poor teacher training, which affects students' oral grammar as one aspect of speaking skills and communicative competence at large.

Having the aforementioned empirical arguments in mind, the current researcher is motivated to conduct on the effects of PBL as LSU in enhancing grade 11th learners' oral grammar skills as one component of speaking skills because of the following reasons. First, speaking skills, including grammar usage of the students at all levels is poor, which has been found out by previous researchers. The current researcher has also observed this reality from his 12 years' experience in both private and public schools, including higher institutions. The researcher, as a matter of chance, has taught learners from grade one to university level. In all levels, there have been situations in which students fail to express their ideas using appropriate and acceptable grammar in speaking skills class. Though the problem is serious at all levels, the current researcher only focused on secondary school students who are enrolled in grade 11.

In the researcher's view, the very problem of learners' poor oral grammar as one component of speaking skill may be the way they are learning and methods the teachers use to teach them-which is possibly a learning instructional strategy. Thus, the instructional learning strategies and teaching methods could be some of the reasons for learners' poor oral

grammar. Second, the researcher believes that the present teaching and learning methods and strategies are not truly student-centered though they are supposed to be. In line with this, the researcher would like to focus on PBL as one of the active and learner-based instructional learning strategies, not as the only one in improving students' oral grammar as one of speaking skills components. On other hand, the researcher would like to note that important there are other learner-based learning instructional strategies like role-playing, cooperative learning, project-based learning and others. However, PBL is different from the aforementioned learner-based instructional learning strategies as it crucially involves an ill-structured problem as a key component [17].

In the international level, there are a number of studies conducted on the effect of PBL in EFL classes. Apart from non-empirical studies that have discussed the use of PBL in language classes [29, 32, 35, 36, 53]. There have been researchers who have attempted to examine the effect of PBL on language learning in general, grammar skills in particular.

The first study was conducted by Zuhriyah [52] on the *Title Problem Based Learning to Improve Students' Grammar Competence*. This research was a collaborative action research whose general purpose to know whether or not Problem-based learning could improve the students' grammar competence. Meanwhile, the specific purposes were to know the lecturer's activities, the students' activities, and the students' responses when problem-based learning was implemented in grammar class. Nine students of the fifth semester of English department of education faculty of Hasyim Asy'ari University (UNHAS) Tebuireng Jombang in the academic year of 2016/2017 became the subjects of this research. The data got was from the observation notes and the grammar test. There was an improvement on students' grammar competence from cycle one to cycle two.

Zuhriyah (2017)'s study is different in a number of ways. First, the population of the study was university students whereas the populations of the current study were grade 11th students. Second, contextually, Zuhriyah [52]'s study was conducted in second language context though the current study was conducted in foreign language context. Third, most importantly, the former study, methodologically employed observation notes and the grammar test while, in the current study, grammar section of standard oral proficiency test by Brown (2004) was adopted. Thus, Zuhriyah [52]'s study, at least, differs in terms of population, context and methodology creating population, context and methodological gaps respectively.

The second study was conducted by Chiou [9] on the title *The Application of Problem-based Learning Approach in English Grammar Instruction*. The study incorporates the problem-based approach (PBL) in the English class with an attempt to improve English low achievers' grammar competence pertaining to relative clauses and their motivation in learning English. Fifty students divided into seven teams with leader for each were recruited. This study adopts the pre- and

post-test research design as well as classroom observation checklist and two assignments. The result indicates that the engagement level of the participants is increased by the scenario-based strategy and their grammar competence improves under PBL instruction after being compared with the scores of pretest and posttest, which suggests that the PBL approach really exerts a positive influence on the performance of the participant. Likewise, Chiou [9]'s study differs from the current study in a number of ways. First, in terms of population, the participants of the study were students university students who took Freshman English Reading course while the participants of the current study were secondary school students. Second, in terms of setting, Chiou [9]'s study was conducted in Taiwan whereas the present study was conducted in Ethiopia-differing in socio-economic status. Third, methodologically, Chiou [9]'s study used both qualitative and quantitative research methods though the current researcher employed only quantitative method. Hence, the above study is different from the present study.

In addition to differences related to methods, setting and population, the aforementioned studies have not addressed the effects of applying PBL in enhancing learners' oral grammar performance. In addition, there were no theories, models, procedures, and implications of PBL mentioned. Thus, there are clear methodological and theoretical gaps [33]. In line with this, most of the studies were conducted outside Ethiopia. This in turn, does not guarantee the effect of PBL in EFL class in Ethiopian context (population gap).

As far as the researcher's reading and knowledge concerned, at local level, there are no studies conducted on the effect of PBL as LSU on students' oral grammar as one aspect of speaking skills. This in turn necessities the current researcher to make a further study on PBL as learning instructional learning strategy in EFL class in general and speaking skills in particular. Keeping this huge, multifaceted and vital gap in mind, the current researcher has developed the following research hypotheses in the study.

Conceptually, PBL is a student-centered learning method that empowers research-based learning by solving real-world or ill-structured problems cooperatively [47]. It was first implemented in a medical school, McMaster University by Howard Barrows and his colleagues in 1969, with the main objectives of acquiring body knowledge of a subject matter, as well as developing problem solving skills among students [2]. Remarkably, since the introduction of PBL in medical education, research on PBL has extended to many other disciplines of education, including English language.

Unsurprisingly, the current researcher has come across PBL with different scholars with in different terms. For instance, according to Barrows [3], PBL is a learning method based on the principle of using real-world problems as a starting point for the acquisition and integration of new knowledge. It is a learner-centered educational method which aims to develop problem-solving skills, self-directed learning as a lifetime habit, and skills for teamwork. It allows

students to acquire an integrated body of knowledge from many different subject areas or disciplines. From a constructivist perspective, this method extends across multiple disciplines because students can understand processes from a real-world perspective [4]. On the other hand, Duch, and Allen [18] considered PBL as an instructional method that challenges students to "learn to learn," working cooperatively in groups to seek solutions to real world problems. These problems are used to engage students' curiosity and initiate learning the subject matter. Here, PBL prepares students to think critically and analytically, and to find and use appropriate learning resources (p. 36).

Contrastingly, Boud and Feletti, [6] deal with PBL as an approach to structuring the curriculum which involves confronting students with problems from practice which provides a stimulus for learning. Still, Hmelo-Silver [22] defined PBL is a development and instructional approach built around an ill-structured problem which is messy and complex; requires inquiry, information-gathering, and reflection; is changing and tentative; and has no simple, fixed, formulaic, "right" solution. Yet, Samford [46] elaborated PBL as is an instructional strategy that promotes active learning. PBL can be used as a framework for modules, courses, programs, or curricula. Indeed, the current researcher has agreed with Samford [46]'s term, instructional strategy, since the term fits the researcher's objectives. The mastery of English language speaking skills in general and oral grammar skill in particular is a priority for many second or foreign language learners. Learners consequently evaluate their success in language learning as well as the effectiveness of their English course based on how well they feel they have improved their spoken language proficiency [43].

Historically, although PBL entered various disciplines a decade after its inception in Canada, humanities and social sciences were among the last discipline to enjoy PBL [2]. This was mostly due to the difficulty of implementing PBL in such disciplines. The main problem was defining the learning problem. Indeed, defining a learning problem such as diagnosing an illness in the patients is easier than diagnosing a problem in history or language education. According to Hung [23], in case of language education, it was even more severe, as learning language as a tool and target could make the learning situation complicated. Therefore, among many disciplines which enjoyed PBL, language education is among the last ones. In addition, Savery [47] argued that only after the turn of twenty-first century, researchers became curious to find out about the effect of PBL on language learning. As a result, in the current researcher's review, not only the literature on PBL and language learning is scant, but also most studies have not followed a model of PBL which should be specifically designed for language education.

Theoretically, PBL is related to a number of theories. The most important theories are social constructivist theory and socio-cultural theory. Contemporary learning theories view learning as a fundamentally social activity [19] and [30].

Social constructivist theories emphasize the importance of learners being actively engaged in their own learning as they engage in meaningful tasks. A key aspect of these theories is the notion of scaffolding. There is an extensive body of research on scaffolding learning in problem based environments [13, 21]. Scaffolding in PBL allows learners to engage in complex problems that might otherwise be beyond their present abilities. Scaffolding makes learning more tractable for students by changing complex and difficult tasks in ways that make these tasks accessible, manageable, and within student's zone of proximal development [12] and [50]. Furthermore, Quintana et al. [39] conceived of scaffolding as a key element of cognitive apprenticeship, whereby students become increasingly accomplished problem-solvers given structure and guidance from mentors who scaffold students through coaching, task structuring, and hints, without explicitly giving students the final answers. An important feature of scaffolding is that it supports students' learning of both how to do the task as well as why the task should be done that way.

Contextually, the possibility of integrating PBL in language learning was fruitfully discussed by Mardziah [31] from the constructivist perspective. Thus, language is learned by engaging learners in social activities that encourage interaction and communication. Negotiation of meaning in language learning is more meaningful if learners are exposed to real-life problems such as in actual situations that require interactions to happen. Using real-life problems is believed to bridge the gap between the theory learnt in schools and the use of language in real-life situations. As learners undergo the process of learning through PBL, they will eventually construct their knowledge and begin to make connections which are meaningful and applicable to the real world, viz. the employment world. In support of this idea, Larsson [29] states that PBL has been used in many studies and places all over the world for the instruction of different skills and sub-skills of language. Thus PBL is a strategy in which the attention shifts from teacher to participant. In this approach, the participant is in the center of attention instead of the teacher. The current researcher believes that this strategy encourages the participants in the process of instruction and facilitates the achievement of speaking skills in general and oral grammar as one aspect of speaking skills in particular. In support of this, Jonassen [25] claims that such an approach helps participants whose language skills are poor, and it improves their productive skills.

1.3. Research Hypotheses

H1: There is a statistically significant mean difference between experimental and comparison groups in terms of oral grammar due to intervention of PBL as *Learning Strategy Use*.

H0: There is no statistically significant mean difference between experimental and comparison groups in terms of

oral grammar due intervention of PBL as *Learning Strategy Use*.

H0: There is no statistically significant mean difference between experimental and comparison groups in terms of oral grammar due intervention of PBL as *Learning Strategy Use*.

1.4. Objective of the Study

To examine the effects of PBL as *Learning Strategy Use* in enhancing the students' oral grammar as one aspect speaking skills in EFL class, grade 11 students.

2. Method

2.1. Research Design and Participants

The current study comprised a non-randomized pre-test, post-test comparison group design as a kind of quasi-experimental research design [5]. Hence, intact class was used instead of randomly composing samples. This is because school classes exist as intact groups and school authorities do not allow the classes to be taken apart and rearranged for research purposes [11]. Accordingly, the current researcher manipulated two classes (11G&11H) of BNCS students who enrolled in 2022 academic year in second semester. Besides, the population of the study included all grade 11th students (N=534, M=298, F=236) who enrolled in 2014/2022 academic year. Moreover, multi-stage purposive sampling technique was employed.

2.2. Experimental Research Groups

There were two research groups for this study. These were experimental and comparison groups. The experimental group was the group that received treatments, and was expected to bring the effect. Accordingly, in this study, the experimental group was taught oral grammar lessons through PBL as LSU. The current researcher prepared learning material from the current students' textbook in a based on the principles and steps of PBL as a learning strategy use. The learning material intervention consisted of key components of oral grammar. The current researcher would like to note that the intervention focused on the methodology rather than content. On the other hand, the current researcher made methodological intervention. Hence, the comparison group was deprived of the treatment, i.e. learning through PBL. The comparison group learned oral grammar skills through conventional methods. The current researcher trained EFL teachers for the implementation of PBL in enhancing the oral grammar of learners and rating criteria as well (for teaching the sections, only one teacher was oriented whereas for rating oral grammar skills two raters were oriented). The training manuals and learning materials were prepared in line with relevant literature.

2.3. Intervention

During the study, the researcher conducted an experimental teaching through the facilitator (trained teacher-who was teaching both classes) in the second semester students of Biftu Nekemte Secondary School (BNSS) in 2022 academic year from 20th February to 30th May 2022. It is very important to note that before the intervention pretest was given. The researcher used problem based learning (PBL)(through the facilitator) as a model in teaching speaking oral grammar. The researcher used PBL to know the progress of students' achievement in oral grammar skills. Each meeting took 40 minutes and the students were taught step by step through several PBL lessons. The researcher developed oral grammar lessons which were taken from students' textbook using PBL as learning strategy use by creating ill- structured problems. As grammar has considerable impacts on communicating with other people, the researcher provided students with valuable materials to assist them in enhancing their grammar. Indeed, after the preparation of the lesson, the researcher trained the teacher (facilitator) the key steps of applying PBL in EFL class properly for two days.

2.4. Instruments

Experimental tests were employed as data collections tools for quantitative data.

Experimental Tests (Pretests & Posttests)

Pre and post-experimental tests were chief and crucial tools of this study. Both tests comprised similar contents of oral grammar. The current researcher adopted tests depending on the literature on the concepts and constructs of speaking skills which comprises grammar as one aspect Brown [7]. In addition, the current researcher considered one of the manifestations of components of speaking skills, i.e. oral grammar. The researcher did not assess the effectiveness of PBL in terms of problem-solving skills as the very aim of the study is only to test PBL as a means, no as an end. Most importantly, the tests comprised the variable under the hypotheses. The test was adopted from Brown [7]. The tests have eclectic nature in terms of types of tests in literature. For instance, the tests were used initially to measure students' speaking performance including oral grammar. Thus, in this regard, they are performance test. On other hand, the researcher adopted the tests from Brown [7] to see the effect of PBL as learning strategy use on students' oral grammar as one aspect of speaking skills. So, it was used to check the effect of the intervention.

2.5. Process of Data Collection and Analyses

Before the intervention of application of PBL as LSU, in the pretest stage, the registered samples of both experimental and comparison groups were assessed by two different raters excluding the current researcher. Then after twelve weeks of intervention, the researcher allowed the samples to be tested again by the same raters in posttests. Then the means of scores

selected for both pre and posttest assessment were computed using the latest SPSS window version 25 (Normality of the data was checked ahead). Next, to guarantee the reliability of the rating process, inter-rater reliability (Cohen's Kappa) was computed [10]. Then, data were analyzed using series statistical tools.

2.6. Data Analyses

The researcher used a series of statistical operations to compute the quantitative section of the study. Descriptive statistics tools the means, standard deviation, and variance of the two groups in the pretest and posttest were calculated to check whether data received is parametric or not. On the other hand, descriptive statistics is used to see the distribution of the scores not necessarily the effect. It also used only for organizing, summarizing and presenting data. Hence, the researcher employed inferential statistics which is important to predict, estimate and generalize findings from samples to population.

Accordingly, a t-test was run to see if the selected groups were somewhat homogeneous as the design of the study was not be a true experiment rather it was a quasi- experiment. The researcher used various forms of t-tests depending on the basic research questions. More specifically, independent t-tests were run. Equally important Cohen's Kappa (for inter-rater reliability) and Cohen's D (Effect Size) were run. The details on each inferential statistics test and justification were presented in the subsequent sections.

2.7. Validity and Reliability

In terms of validity, the tools were given to two PhD holders; and were commented properly. In the context of the current study, the researcher believes that all kinds of reliability might not be ensured. Thus, inter-rater reliability was computed. The following depicts the inter-rater-reliability of the two raters in both pre and posttests.

Table 1. Summary of Kappa Measure of Experimental Group.

NO.	Construct	Kappa Measure			
		Pretest	Interpretation	Posttest	Interpretation
1	Oral grammar	.495	FAIR	.677	HIGH

In the current researcher's view Table 1 showed that inter-rater reliability values are acceptable.

Table 2. Summary of Kappa Measure of Comparison Group.

NO.	Construct	KAPPA MEASURE			
		Pretest	Interpretation	Posttest	Interpretation
1	Oral grammar	.495	FAIR	.551	FAIR

Like the preceding table, Table 2 indicated that inter-rater reliability values of comparison groups in both are acceptable.

3. Results and Discussion

3.1. Results.

3.1.1. Normality of Data

The current researcher employed standard error of skewedness and kurtosis of the data for checking normality [20, 28, 38, 40, 41]. Accordingly the z-scores of oral grammar

as one aspect of speaking skills data were calculated and analyses were made in advance in the following table.

Depending on above table, it is possible to know that for the distribution of data for oral grammar as one aspect of speaking skills for experimental group was normal in pretest. This was indicated by the descriptive statistics, specifically the skewedness and kurtosis which showed that the data were approximately distributed as the skewedness and kurtosis values are 0.38 (.13/.343) and -.98 (-.667/.674) respectively. -which are found between +1.96 and -1.96.

Table 3. *The Summary Descriptive Statistics of Students' Oral Grammar in Pretest of Experimental Group.*

	Skewedness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Experimental group's Oral Grammar Score in Pretest	.130	.343	-.667	.674

Table 4. *The Summary Descriptive Statistics of Students' Oral Grammar in Posttest of Experimental Group.*

	Skewedness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Experimental group's Oral Grammar Score in Posttest	-.271	.343	-1.051	.674

Like that of pretest, the distribution of data of oral grammar for the experimental group in posttest is normal as the skewedness and kurtosis values are -0.8 (-271/.343) and -1.56 (-1.051/.674) respectively.

Table 5. *The Summary Descriptive Statistics of Students' Oral Grammar in Pretest of Comparison Group.*

	Skewedness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Comparison group's oral grammar Score in Pretest	.312	.343	-1.019	.674

Table 5, like the preceding table, showed that the distribution of data for oral grammar as one aspect of speaking skills in pretest was normal as the skewedness and kurtosis values are .90 (.312/.343 and -1.51 (-1.019/.674) respectively.

Table 6. *The summary descriptive statistics of students' oral grammar in posttest of comparison group.*

	Skewedness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Comparison group's oral grammar Score in posttest	.066	.066	.066	.066
	.343	.343	.343	.343
	-.819	-.819	-.819	-.819
	.674	.674	.674	.674

Finally, the distribution of data of the oral grammar of the comparison group in posttest is normal as the skewedness and kurtosis values are 0.19 (.66/.343) and -1.2 (-.819/.674) respectively. The entire above tables confirmed that the data distributions of oral grammar in pre and posttests for both experimental and comparison groups were normal. Hence, the researcher employed parametric statistical tests in ad-

vance.

3.1.2. Pretest Result of Experimental and Comparison Groups

In the following table, the current researcher has depicted the Independent sample test of pretest score of oral grammar as one aspect of speaking skills of experimental and compar-

ison group prior to the intervention of PBL as learning strategy use. The scores of the pretest were vital for the sake of checking the similarity of the groups.

From Table 7, it is possible to infer that the experimental and comparison groups' pretest score of oral vocabulary as one aspect of speaking skills before the intervention PBL as learning strategy use is similar. To be specific, score of experimental group in oral grammar ($M=1.615$, $DF=94$) is nearer that

of comparison group ($M=11.688$, $DF=94$), most importantly p-value greater than 0.05 (.729). Hence, experimental and comparison groups were similar prior to the intervention. The current researcher would like to note that the pretest scores were not used for grouping the participants since the study was quasi-experimental in design-which allows the participants involve in the study being in the intact class. Yet, it was used as bench mark for the intervention.

Table 7. Independent Samples Test of Pretest Score of Experimental and Comparison.

	Group	N	Mean	df	Sig. (2-tailed)	Mean Difference
Pretest score of Oral Grammar	EXP	48	1.615	94	.451	-.0729
	COM	48	111.688			

3.1.3. Posttest Scores of Experimental and Comparison Groups

Before proceeding the analyses of experimental and comparison group of the effect size of the posttests was computed, and depicted in following table.

Table 8. Effect size of the Posttests.

Variable	Groups	Mean (X)	Standard Deviation (SD)	Cohen's D	Interpretation
Oral Grammar	Experimental	3.0729	.69946	1.5	Large
	Comparison	1.8854	.84578		

Computing effect size is quite important since computation of mean difference and significance level is insufficient to strongly reject or fail to reject the null hypotheses –which might be prone to type I or type II errors.

Suggested hypotheses

H_0 : There is no statistically significant difference between experimental group and comparison groups of grade 11 students' Oral grammar as aspect of speaking skills because of

applying PBL as learning strategy use for the experimental group ($\alpha \leq 0.05$).

H_a : There is statistically significant difference between experimental group and comparison groups of grade 11 students' Oral grammar as aspect of speaking skills because of applying PBL as learning strategy use for the experimental group ($\alpha \leq 0.05$).

Table 9. Descriptive Statistics of the Results of Posttests of Experimental and Comparison Oral Grammar.

Group	N	Mean (X)	Standard Deviation (SD)	
Experimental	48	3.0729	.69946	.10096
Comparison	48	1.8854	.84578	.12208

In the above represented data, the groups are different on the posttest in Oral Grammar after the intervention of PBL as learning strategy use. It shows that experimental group outperformed the comparison group. To see if the difference between

the means of experimental group and comparison group was meaningful or significant, an independent t-test was computed. The results of the computation were presented in the following table.

Table 10. Independent T-Test for both Groups in the Post-Test in Oral Grammar.

F		Sig.	t	Sig (2-tailed)
Equal variances assumed	1.433	.234	7.496	.000
Equal variances not assumed			7.496	

Considering the data shown above, since the t-observed ($t = 7.496$, $DF =$, $P > .05$) exceeded the t-critical of 1.986, the result of computed independent t-test is convincing enough to reject the null hypothesis. In other words, the result confirmed the difference between the two groups and the positive effect of PBL as learning strategy use in students' oral grammar. Besides, it reveals that the experimental group has outperformed the comparison group with large effect size ($d = 1.5$).

3.2. Discussion

Before the intervention of PBL as learning strategy use, the pre-test data showed that the students had limited and broken grammatical skills to express their idea and feeling. They used only short, fragmented and awkward sentences. Even some of them were not able utter properly because of their poor grammar. By using PBL as learning strategy use, the students got challenge to enrich themselves about different grammar rules like tense and agreement in order to make a good conversation and for the sake of their discussion. After doing several practices using PBL as learning strategy use, students' grammar in speech improved. Besides, there was considerable improvement from pretest to posttest in oral grammar as one component of speaking skills. Furthermore, the posttest result of experimental group students showed that the students understood how to use appropriate grammar in their conversation correctly. They also corrected their grammar by themselves when they did mistakes in performing a conversation. The current researcher has come across a number of studies which support the pilot's findings on vocabulary. In line with this, Norzaini and Shin [36] argued that PBL allowed students to practice and improve the language skills they already possessed, while focusing on unfamiliar grammar structures and cultural connections at once [24]. Similarly, Rohim, [45] found that the implementation of PBL in EFL class remarkably showed improvements on students' grammar. Other researchers, Keong and Mohammed [27] found that the implementation of PBL was able to improve the speaking skill of Iraqi high school students and motivate them towards better language achievement. The improvement was specifically found in terms of pronunciation, vocabulary, fluency and grammar. Then, the other researchers, Demirel and Dağyar [15] did a meta-analysis study to determine the effects of PBL on students' attitudes as compared to traditional teaching. The result of their study revealed that PBL has

high positive effect on students' grammar skill. It indicated that PBL is effective in helping students construct grammatically correct sentences.

4. Conclusions

The pre-test students' oral grammar as one aspect of speaking performance showed that the students had difficulties to express their idea and feeling using correct, at minimum, acceptable grammar. It was witnessed that they only used unfamiliar and fragmented sentences even some of them forgot the simple sentences because of their nervousness or limited oral grammatical performance. By using PBL as learning strategy use, the students got challenge to boast themselves about the sentence variation with important grammatical aspects agreement, tense and parts of the speech in order to make a good conversation and for the sake of their discussion. By doing several practices using PBL as learning strategy use, the test result increased from a test to another. The students' oral grammar achievement improved because they got new way of learning grammar from the treatment. Hence, the current researcher concluded that PBL as learning strategy use has positive effect on students' oral grammar as one aspect of speaking skills.

Abbreviations

BNNS	Biftu Nekemte Secondary School
COM	Comparison Group
EFL	English as Foreign Language
ELT	English Language Teaching
EXP	Experimental Group
LSU	Learning Strategy Use
MOI	Medium of Instruction
PBL	Problem-Based Learning

Data Availability Statement

The data used to support the findings of this study are available upon request to the corresponding author.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

References

- [1] Awol Endris (1999). Conceptions of language teaching and learning and classroom decision making: a case study of high school English teachers in Ethiopia. AAU. Unpublished doctoral dissertation.
- [2] Barrows, H. S., & Tamblyn, R. (1980). Problem-based learning: An approach to medical Education. Springer.
- [3] Barrows, H. S. (1986). Taxonomy of problem-based learning methods. *Medical Education*, 20(6), pp. 481–486.
- [4] Berns, R. G., & Erickson, P. M. (2001). Contextual teaching and learning: Preparing students for the new economy.
- [5] Bogdan, R., & Biklen, S. (2003). Qualitative research for education. An introduction to theories and methods (4th ed). Pearson.
- [6] Boud, D., & Feletti, D. E. (1997). The Challenge of Problem Based Learning (2nd ed.). Sterling.
- [7] Brown, G., & Yule, G. (1999). Teaching the Spoken Language. CUP.
- [8] Chastain, K. (1976). Developing Second Language Skill. Rand McNally.
- [9] Chiou, B., (2017). The Application of Problem-based Learning Approach in English Grammar Instruction: A Pilot Study. *Journal of Language Teaching and Research*, Vol. 10, No. 3, pp. 446-453.
- [10] Cohen, J (1988). Statistical power analysis for the behavioral sciences.
- [11] Creswell, J. W. (2014). Research design: quantitative, qualitative, and mixed methods approaches. (3th ed.). Sage.
- [12] Dastgeer, G., & Afzal, M. T. (2015). Improving English Writing Skill: A Case of Problem Based Learning, 3(10), 1315–1319.
- [13] Davis, E. A., & Linn, M. C. (2000). Scaffolding students' knowledge integration. *International Journal of Science Education*, 22, pp. 819–834.
- [14] Dejene Letta. (1994). Language Testing and its Practical Application: the testing of Reading in Focus. AAU. (Unpublished doctoral dissertation).
- [15] Demiral, M. & M. Daygar (2016). *Eurasia Journal of Mathematics, Science & Technology Education*, 2016, 12(8), 2115-2137.
- [16] Diribsa, Dufera, (1999). "Principles of Curriculum Inquiry. Distance Education Material for In Service Trainee. (Unpublished material). Addis Ababa: AAU.).
- [17] Dornyei, Z. (2001). Motivational strategies in the language classroom. CUP.
- [18] Duch, G & Allen (2001). The Power of Problem Based Learning.
- [19] Duschl, R. A., Schweingruber, H. A., & Shouse, A. W. (2007). Taking science to school: Learning and teaching science in grade K-8. National Academies.
- [20] Field, A. (2009). *Discovering Statistics Using SPSS* (3rd Edition). London: SAGE Publications, Ltd.
- [21] Golan, R., Kyza, E. A., Reiser, B. J., & Edelson, D. C. (2002). Scaffolding the Task of analyzing animal behavior with the Animal Landlord. Palgrave Macmillan.
- [22] Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review*, 16(3), 235–266.
- [23] Hung, W. (2006). The 3C3R model: A conceptual framework for designing problems in PBL.
- [24] Jemmar, A. Ramos (2022). Utilization of Problem-Based Learning in Improving Grammar Skills of Grade 8 Students. *International Journal of Novel*,
- [25] Jonassen, D. H. (2011). Toward a design theory of problem solving. *ETR&D*, 48(4), pp. 63–85.
- [26] Kayi, H. (2006). Teaching Speaking: Activities to Promote Speaking in a Second Language. *The Internet TESL Journal*, Vol. XII,
- [27] Keong & Mohammed (2015). "Improving Iraqi Secondary Students' Speaking Performance Through PBL", *International Journal Of Education And Research*, Vol,(3) 12,
- [28] Kim, H. (2013). Statistical notes for clinical researchers: assessing normal distribution using Skewedness and kurtosis. *Open lecture on statistics (NA)*, pp. 52-54.
- [29] Larsson, J. (2001). Problem-based learning: A possible approach to language education? Polonia Institute, Jagiellonian University.
- [30] Lin, L. F. (2015). The impact of problem-based learning on Chinese-speaking elementary school students' English vocabulary learning and use. *System*, 55, 30–42.
- [31] Mardziah H., A. (2005). Problem-based learning in language instruction: A constructivist method. *ERIC Clearinghouse on Reading, English, and Communication Digest* #132.
- [32] Mathews-Aydinli, J. (2007). Problem-based learning and adult English language learners.
- [33] Miles (2017). Types of research gaps.
- [34] MOE, (2002). Ministry of Education of Ethiopia. AA.
- [35] Normala Othman, & Mohamed Ismail Ahamad Shah. (2013). Problem-based learning in the English language classroom. *English Language Teaching*, 6(3), 125–134.
- [36] Norzaini A. & Ling, K. S. (2012). Problem-based Learning in English for a Second Language Classroom: Students' Perspectives. *International Journal of Learning*, 18(6), 110–126.
- [37] Palmér, A (2010). *Speaking Lessons*. Lund: Student literature.
- [38] Park, H. M. (2008). Univariate analysis and normality test USING SAS, STATA, AND SPSS.

- [39] Quintana, C., Reiser, B. J., Davis, E. A., Krajcik, J., Fretz, E., Duncan, R. G., et al. (2004). A scaffolding design framework for software to support science inquiry. *Journal of the Learning Sciences*, 13, 337–386.
- [40] Rachon, J., Gordan, M. & Kieser, M. (2012). To test or not to test: Preliminary assessment of normality when comparing two independent samples, *BMC Medical Research Methodology*, (12), 81.
- [41] Razali N. M. & Wah, Y. B. (2011). Power comparisons of Shapiro- Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests, *Journal of Statistical Modeling and Analytics*, 2(1), 21-33.
- [42] Richard, A. (1981). *Teaching language in context* (3rd Ed.) Heine and Heine Publishers.
- [43] Richard, J. (1990). *Con conversationally speaking: approaches to the teaching of conversation* CUP.
- [44] Richards, J. C., Schmidt, R., Kendricks, K., & Kim, Y. (2002). *Longman dictionary of Language teaching and applied linguistics* (3rd ed.). New York: Pearson.
- [45] Rohim, A. (2014). Improving students' speaking skill through problem based learning (PBL) strategy. *JP3*, 3(8), 1-7.
- [46] Samford (1998). *Definition of Problem Based Learning*.
- [47] Savery, J. R. (2006). Overview of problem-based learning: Definitions and distinctions.
- [48] Tadele Adamu. (1990). *Individual differences in second language learning in formal context*. Addis Ababa University. (Unpublished doctoral thesis).
- [49] Tamene, K. (2000). *Classroom Verbal Behavior and Learning Opportunities in Selected Secondary School EFL Classroom*. Unpublished doctoral dissertation, Addis Ababa University, Ethiopia.
- [50] Vygotsky, L. (1987). Zone of proximal development. *Mind in Society: The Development of Higher Psychological Processes*, 5291, 157.
- [51] Zeleke, T. Lucha & Alemtsehay Berhanu (2015). A Study on the Implementation of Students' Classroom Oral Interaction in Sire Secondary School EFL Class: Grade 10 in Focus 2015 *STAR Journal*.
- [52] Zuhriyah, M.(2017). Problem-Based Learning to Improve Students' Competence in Grammar.
<http://dx.doi.org/10.18326/rgt.v10i1.48-61>
- [53] Zulida K. (2013). *Enhancing Students' Problem Solving Skills Using Problem-Based Learning as an Instructional Communication Approach*. University Putra Malaysia.