

## Project-based learning and the development of students' writing skills in english language in secondary schools in fako division of the south west region of Cameroon

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### Abstract

This study sought to examine the effects of PBL on the development of students' writing skills in English Language in secondary schools in Fako Division of the South West Region of Cameroon. The target population for this study was made up of 4694 form four students (2088 males and 2606 females). A sample of 240 students was drawn from the target population. The sampling technique used for the study was the multi stage sampling technique. The design adopted for the study was a pretest posttest Quasi Experimental Design which involved both the control and the experimental groups. The test instrument was validated by experts. The reliability coefficient of the instrument was calculated using Alpha Cronbach and the reliability coefficient was 0.709 for the pretest, 0.764 for the posttest 1 and 0.784 for posttest 2, of the writing skills on a scale of 1. Thus, the instrument was considered reliable for the study. Method of data analysis was descriptive and inferential statistics. The results revealed that the use of project-based learning strategy in teaching students in the experimental group, significantly improved on their development of writing skills (Calculated t-values 10.801-16.616 > critical value of 1.97, and p-values < 0.001). At the pre-test level, the mean difference between the control and experimental group was just 7.355 (Mean control group = 32.85; experimental 25.00). However, after the use of project-based teaching strategy at post-test 1, the mean difference increased drastically to 13.802 (Mean control group = 30.95; experimental 44.75). Finally, at post-test 2, the mean difference widened from 13.802 to 21.405, with students in the experimental group scoring a high mean of 56.45 almost two times higher when compared to the mean of 35.04 for students in the control group. Percentage wise, at the post-test 1 in the experimental group, 6.2% of students did not convincingly demonstrate the development of writing skills while 69.0% demonstrated that mildly, and only 24.8% properly. However, at the post-test 2 after the continuous use of project-based learning strategy, a significant improvement was observed with the students in the experimental group scoring 62.8% of the development of writing skills more than the conventional teaching strategy. Thus, the use of project-based learning strategy in teaching English for form four students significantly improved the development of their writing skills. Based on the results, it was recommended that project-based learning strategy should be applied in the teaching of English language secondary schools.

**Keywords:** Project-Based Learning; Conventional teaching Strategy; Productive Skills; Writing Skills Development

### 1. Introduction

English Language is used as a means of communication and interaction all over the world. It is used for businesses, studies and other purposes. English is one of the six widely used languages and spoken by billions of people around the world. This importance of English has led to an increase in demand. In education, English has become the primary

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language of communication worldwide. In Cameroon, English is one of the two official languages and is used as the language of instruction in the English subsystem of education. Thus, students' acquisition of the English Language skills to facilitate studies in the classroom and in other subjects is primordial. In spite of the importance of English Language portrayed, the acquisition of writing skills among students has been consistently mediocre and this has affected their academic performance adversely. A lot of secondary school leavers cannot write a good letter, a report, or write an article in English thus expressing their insufficient acquisition of writing skills. The teaching of English Language, therefore, needs some attention to help students acquire this skill.

According to Parrel and Jain (2008), English language is the window which opens up vast prospects of human achievement. Proficiency in English opens many other doors; thus, teaching strategies and approaches should provide students with favorable environments to help them achieve more experience in understanding language processes. The process in education where learners ask their own questions, plan their research, work in groups, analyze and express their own findings; structure their own findings and understanding to enable a more effective and lasting achievement is called the Project based learning (PBL). This type of instruction requires a great deal of interaction between environment, content, materials, teacher and learners. (Orlich, harder, Callahan & Gibso, 1998). This method gives both teacher and learner the opportunity to question, to express their opinions and find answers to solutions. More so, it has some positive results like the students being active, having improved understanding and developing skills to understand the nature of language better (Mertz, 2004). According to Çelik (2025), the teaching of English language in this scientific and technological world needs to equip the teachers with first-hand opportunities to engage in intercultural communication, and increase cultural sensitivity and awareness; build global perspectives, adapt pedagogical strategies, develop flexibility and adaptability; boost confidence and self-efficacy, and develop resilience. One of the teaching strategies that meet up the teaching of English language in this Era to equip the learners with productive skills is project-based learning.

Kemaloglu-Er & Sahin (2022) posits PBL is one of an active teaching approach which provides a concrete and authentic learning environment in English Language learning and enables students to take part in an active learning environment (Stanley, 2021). The purpose of this study is therefore to investigate if PBL can enhance the development of writing skills of English Language students in secondary schools in Fako Division of the South West Region of Cameroon.

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## 2. Review of Related Literature

### 2.1. Project-Based Learning (PBL)

Project-based learning is among the current pedagogical trends that have become the central part of the 21<sup>st</sup> century English education that has caught language practitioner's attention (Puangpunsi, 2021; Smith & Brown, 2020). PBL is an instructional method that puts forward the learner centeredness' and provides abundant opportunity to deal with meaningful and authentic communication. The basis of project-based learning is hardly new. Early in the 1920s, William Heard Kilpatrick advocated project-based instruction (Sunbul, 2010). Project based learning is an authentic learning strategy in which students plan, implement and evaluate projects that have real world applications beyond the classroom (Blank, 1997; Hawel, 1997; Westwood 2008). It is an instructional method centered on the learner. Learners develop a question and are guided through research under teacher's supervision (Bell, 2010). Instead of using a rigid lesson plan that directs the learners down a specific path of learning out comes or objectives, project-based learning allows in-depth investigation of a topic by the students (Erden, 2002; Hainis & Kartz, 2001). PBL is also a comprehensive approach to classroom teaching and learning that is designed to engage students in the investigation of complex, authentic problems and carefully designed products and tasks within a particular time range (Blumenfeld et al., 1991).

Furthermore, According to Nurcahya and Sugesti (2020), Project Based Learning is an approach to learning that teaches curriculum concepts through a project. The project is guided by an enquiry question that drives the student to apply their acquired knowledge. Thus, allows students to investigate deeply (Helm & Katz, 2011). According to Frank and Barzilai (2004), project based learning is a constructivist teaching strategy where the project work is assigned to a group of students or individuals and starts with the selection of a particular topic by the learners with the teacher as a facilitator.

In addition to that, PBL is an instructional teaching method that is centered on the learners. Students develop a question and are guided through research under the teacher's supervision (Bell, 2010). Instead of using a rigid plan that directs a learner down a specific path of learning outcomes, PBL allows in depth investigation of a topic worth learning more about (Erden, 2002). Thomas, Mergen Doller, & Michelson (1999) describes project within project-based learning as based on challenging questions and making students have central role in designing, problem-solving, decision-making process so giving students the opportunity to work relatively, autonomously. In PBL student's plan, implement and

evaluate projects that have real world applications beyond the classroom (Blank, 1997). PBL is a comprehensive approach or strategy to classroom teaching and learning that is designed to engage students in investigating complex authentic problems and carefully designed products and tasks (Blumenfield et al., 1991). The use of PBL in class is possible after proving the information that is needed for the project. The classroom activities should be student centered, cooperative and interactive (Mour Sound, 1999).

PBL according to Zhang (2021) can also be seen as a model that organizes learning around projects. It is also learning strategy in which students' plan, implement and evaluate projects that have real-world applications beyond the classroom (Thomas & Mergendoller, 2019). It is one of the methods or approach grounded in constructivism by supporting student engagement in problem solving situations, (Nurcahya & Sugesti, 2020). Project-based learning increases the motivation of students to learn. According to Bottoms and Webb (1998) using PBL, teachers often promote higher class participation and greater willingness of the students to do homework.

When teachers successfully implement project-based learning, student can be highly motivated, feel actively involved in their own learning and produce complex high-quality work (Blummerfeld et al., 1998). PBL is also an authentic learning model or strategy in which learners plan, implement and evaluate projects that have real-world applications beyond the classroom (Blank,1997; Harwell; 1997; Westward, 2008). Thomas, Mergendoller & Michaelson (1999) described project-based learning as based on challenging questions and making students having central control in design, problem-solving, decision-making processes thereby giving students the opportunity to work relatively autonomously. It also engages students in gaining knowledge and skills through an extended inquiry process.

According to Klein (2009), PBL is an instructional strategy use in empowering learners to pursue content knowledge on their own and demonstrate their new understanding through a variety of presentation modes. It is the learning model that uses a problem as the first step in collecting and integrating knowledge based on real activity. In line with Klein (2009) as cited in Hartono and Mega (2020), Project-Based Learning is an instruction using authentic, real-world project, based on a highly motivating and engaging question, task, or problem to teach students academic content in the context of working cooperatively to solve the problem.

Based on the definitions above, it can be concluded that PBL is an instructional method using authentic, real-world project, based on a highly motivating and engaging question, task, or problem to teach students academic content in the context of working cooperatively to solve the problem by providing strategy of empowering learners to pursue content knowledge on their own and demonstrate their new understanding through a variety of presentation modes. "PBL is thus an instructional strategy use for empowering students to pursue content knowledge on their own and demonstrate their new understanding through a variety of presentation modes" (Klein, et al., 2009. p, 8). "The use of PBL activities in teaching English is said to foster students' autonomy and encourage active and student-centered language practice" (Florez, 1999. p, 17). Boerma et al (2016) puts it forward that learning and achieving a deeper level of understanding can be encouraged effectively by learning from examples and learning by doing. Thus. Collaborative nature of PBL promotes a greater appreciation for social responsibility.

Students in PBL activity work to solve problems that are authentic, curriculum-based, and interdisciplinary cooperatively. It can be concluded that Project-Based Learning aimed at problem-solving in a collaborative environment over a period of time. It is a hands-on experience that starts with driving questions or problems which make activities and leads to meaningful products at the end.

Moreover, PBL can also be assumed as an "instructional approach that contextualizes learning by presenting learners with problems to solve or products to develop" (Moss & Duzer, 1998. p, 1). PBL is different from conventional teaching strategy in which it emphasizes learning through student-centered, interdisciplinary, and integrated activities in real world situations (Solomon, 2003; Willie, 2001 as cited in Poonpon et al., 2011). It is "student-centered and driven by the need to make an end-product" (Fried-Booth, 2002. p, 8). Project-Based Learning is caused by the intrinsic needs of students who develop their own tasks individually or in small groups. It links language in the real world with language in textbooks. Hutchinson (1993. p, 104) reiterated that PBL is a "powerful and motivating teaching method to develop students' second and/or foreign languages" through learning by doing. Students often see the target language as something outside their world since they have no chance to use the language learned in the classroom or to use it outside the classroom. PBL allows students to work in an authentic and meaningful context and they can work either alone or in groups. The students are challenged and responsible to solve authentic problems. In this light, students can develop their language skills and communicative competence. They will also gain confidence, cooperation, imagination, independence, and self-discipline. Therefore, they can communicate about their life, culture, and world in the target language when they learn through PBL. Guo (2006. p, 147) postulates that "PBL is an activity that enhances language and content learning in English learning in secondary schools".

## 2.2. Writing Skills

Writing is the process of using symbols (letters of the alphabet, punctuation and spaces) to communicate the thoughts and ideas in a readable form (Parel & Praveen, 2008). Writing is also a medium of human communication that involves the representation of a language with written symbols. Writing skills include all the knowledge and abilities related to expressing ideas through the written word. Technical knowledge about writing conventions, style guides and formatting for different situations are also an important part of writing skills. Writing is one of the four main skills in language, it is a productive skill and it is also a system of writing symbols representing the sounds, syllabus or words form and function of language with different mechanisms, capitalization, spelling and punctuation.

Based on the importance of writing skill, students need to develop this skill to meet their academic needs. Therefore, students should improve the writing skills with the help of the teacher. It is very clear that students having good writing skills are always successful at expressing their ideas and reaching at their goals in writing. The purpose of writing is to teach students on how to write with coherence, appropriate grammar structure, vocabulary, editing, and acceptable spellings.

According to Nunan (1991), writing is an extremely complex cognitive activity in which the writer is required to demonstrate control of variables simultaneously. At the sentence level, these include control of contents, format sentence structure, vocabulary, spelling and letter formation. Beyond the sentence, the writer must be able to structure and integrate information into cohesive and coherent paragraphs and text. Strong writing skills may enhance students' chances for success (Mirza & Gottardo, 2023). In discussing the significance of writing to learning, it also stresses that, writing is an essential factor of language learning.

Motivation is also a key factor in the writing process as students exhibit poor communication skills as observed by language experts. Adams (1996) says students lack motivation when approaching the writing process and students lack positive attitudes towards the writing process. This leads to questions as to what techniques and methods work best to teach students to write, and if indeed good writing can be taught (Graham & Harris, 1997). Professional literature suggested that deficiency in writing can be caused by inadequate teacher training and ability to use effective teaching strategy. Teachers who lack sufficient training in the teaching of the writing process often use past ineffective practices if they have not received supported staff development in writing instruction.

Teachers who are knowledgeable and effective in teaching the writing process are able to focus more on the instruction on teaching writing (Bridge, Compton, Hall & Cantrell, 1997). Teachers who incorporate best practices with realistic writing example increase their students' writing ability (Boerma & Dye, 1997).

Conventional teaching approach to writing are often observed as asking the students to write down sentences using vocabulary, grammar, and right sentence structures correctly. Students are often given little guidance other than initial prompts and reminders to follow necessary rules and conventions. Using this approach, teachers usually fail to make students develop good writing techniques through focused questions and daily practices. Time spent on allowing students engage in the writing process is also of concern. Students need to practice in order to acquire good writing skills in-structured free writing and formalized structured writing are necessary in order to produce good writers. Writing skill must be taught and practiced using appropriate teaching strategy.

Writing skill is an essential feature of language learning because it provides a very good means of grasping the vocabulary, spelling and sentence pattern. It becomes an important aspect of students' expression at higher stage of learning for the following reasons: It provides an excellent consolidating activity; it is the most efficiently acquired when practised than the other skills; It has been suggested that writing is hailed a service activity for most students rather than an end itself.

Nowadays, it should be noted that in the globalization era, people create communication in written form more, people are also more interesting to communicate with each other via gadget in social media which requires much writing. People spend their time on their gadget, they write and browse information a lot in social media like types something in a blog, type a message via WhatsApp, Instagram, Line, BBM, or another application. Time by time communication more easily and practically through technology, it means that people need to have good writing skills in order to transmit their information effectively.

According to Apsari and Aryana (2018), writing skill is important for career and personal life because others will judge our thinking ability according to what we write and how we write it. It is supported by Mundriyah and Parmawati (2016) that writing skill is important, it does not get enough attention and proper time allocation in the teaching and

learning process. According to Gebhard (1996), as cited in Apsari and Aryana (2018), writing involves several components which have to be considered including the improvement of students' writing. Improving Students' writing ability through PBL can tell our experience in the past.

According to Richard and Rodgers (2014), writing is the most difficult skill to be mastered by learners. This is due to not only to the need to generate and organize ideas using appropriate choice of vocabulary, sentences and paragraph organization but also to turn such ideas into readable text.

However, Rokhyati (2014) opines that writing is the most difficult language skills, even for the native users. We need integrated skills to be able to produce a piece of writing. Those skills are; understanding grammar, generating ideas (content), organizing ideas (organization) and using mechanics. He reiterates that many students face difficulties in writing because it is difficult for them to master and integrate the micro skills. Some students may have good ideas and can organize their ideas well, but the grammar and words they use are not correct. On the other hand, some other students have good grammar and master the vocabulary well, but cannot organize their ideas. As a result, the product of their writing is not good.

Based on the researcher's observation as a professional in English teaching, writing is considered one of the difficult skills for students in most secondary schools in Cameroon and universities. Besides, in order to improve students writing skills, the importance of using effective and student-centered teaching strategy such as project-based learning among others cannot be overemphasized. This will go a long way to enhance the development of students writing capability. By doing the project, the students hope to practise more in writing and enjoy in the process to improve their writing (Harmer, 2007).

Students need to be taught how to write, by so doing their writing skills will be well developed. No one comes into this world knowing how to write, how to regulate grammar, and tenses. Similarly, nobody comes into the world knowing how to catch fish, mix paint, drawing a mountain, bake a cake, or drive a car without learning how to. Though some people seem to acquire the skills with very little effort. Most of us become expertness in what we choose to do through step-by-step learning reinforced by step practice.

Moreover, the practice design in teaching writing should arouse students' interest and not boring. A strategy such as PBL which integrates learning by doing is paramount to enhance the development of writing skill in students. In this strategy, students not only learn knowledge and elements of the course curriculum, but also apply what they know to solve authentic problems and produce result that matter. PBL engages the student in the implementation to bring out the competencies in the students. It should be noted based on the importance and effectiveness of PBL on the students that, it is sometimes referred to a teaching technique, a teaching strategy or a learning model (Bas, 2011). In PBL students not just learn something but they create something by their own thus also enhancing creativity. Through students' writing capabilities can be greatly and effectively improved. According to Jonnasen and Rohrer-Murphy (1999) as cited in Elita, Desrina & Zainil (2012) by doing the project, the students are hoped to practice more in writing and enjoy in the process to improve their writing.

PBL is anchored on social constructivism theory by Lev Vygotsky. Vygotsky emphasizes the role of social interaction of their learning contexts with all its possibilities and limitations. They construct knowledge by working as teams with each member of the team with their unique capabilities. In Project-based learning, students engage in realistic problems with student's skills and interest and structure group work with groups of three or four students with diverse skill levels and interdependence role. By doing this, student's work in an atmosphere where they undertake activities by themselves and adopt responsibility of their learning thereby enabling them achieving their goals and objectives faster and better.

According to Arochman, Margana, Ashadi, Achmad, Nugrahaeni, & Baihaqi (2024), writing skill is a process of meaning and a series of related text-making activities: generating, arranging and developing ideas in sentences: drafting, shaping rereading the text, editing and revising. Harris (1993) also explains that language in general allows us to construct representations of experience, writing. Writing, allows us to further the option of working on the representation. According to Brown (2001), there are six categories or aspects of writing evaluation:

### *2.2.1. Content*

This consist of thesis statement, related ideas, development of ideas through personal experience, illustration, facts, opinion, use of description, causes and effects, comparison, contrast and consistent focus.

### 2.2.2. Organization

The effectiveness of introducing, logical sequence of ideas, conclusion and appropriate length.

### 2.2.3. Discourse and Cohesion

Consist of topic sentences, paragraph unity, transitions, discourse markers, cohesion, rhetorical convention, reference, fluency, and variation.

### 2.2.4. Syntax

- **Vocabulary:** This consist of using meaningful words or phrases
- **Mechanics:** These also consist of spelling, punctuation, citation of references (if applicable) and neatness and appearance. Also, Brown (2001) states that if the teachers still need to assign a single grade or score to each paper, then consider weighting the first few categories more heavily.

### 2.2.5. Components of Writing

- **Content:** Subject Knowledge, relevance and extent.
- **Organization:** Coherence, fluency, clarity, logical sequencing.
- **Vocabulary:** Richness, appropriate register, word form mastery.
- **Language Use:** Accuracy (use of article, word order, countable and uncountable nouns, prepositions, sentence constructions).
- **Mechanics:** Paragraphing, spelling, capitalization, punctuation.

## 2.3. Types of Writing (Composition)

### 2.3.1. Guided and Controlled Composition

In this type of composition, the learners are supplied all necessary structural and lexical items to go along with the thoughts, and ideas to be expressed. The role of the teacher in this is only a guide (Erdem & Akkoyunlu, 2002). The teacher gives them guidance by way of asking questions, pictures, cues etc. It enables students to work independently under guidance of teacher.

### 2.4. Free Composition

In free composition, writing is a discovery strategy intended to encourage the development of ideas without concern for the conventional rules of writing. It is also the practice of writing down all your thoughts without stopping and without regard for spelling, grammar or any of the usual rules for writing. This type of composition according to (Boerma, 1997) develops the ability of learning through insight. In the beginning of the writing they need the guidance of the teacher but later they use it independently. It is called free composition at this stage as the learners are free to choose their structure and vocabulary and express their own thoughts and ideas on a given topic.

However, empirical reviews have consistently shown that English Language students at the general certificate of education in Cameroon ordinary levels have been showing lower scores in the section of the English paper that warrants the students to demonstrate their writing skills than any other language skills.

Vygotsky's assumptions lead to conclude that interaction belongs to the very nature of language, because language is socially based. From this perspective, content is important, but interaction is still more important: you cannot reach true linguistic achievements if opportunities for interaction are not present. It is obvious that the kind of interaction needed must be 'meaningful' and relevant. What else can be expected from interaction with others? One might raise the problem of how the learner will manage to integrate and assimilate knowledge coming from outside. And the answer to this is that nature provides the learner with the necessary capacity and resources, as needed.

### 2.5. Statement of the Problem

English language is an important subject in the secondary school curriculum. It builds up skills necessary for global communication and creates opportunity for interactions between individuals. In Cameroon, English Language is one of the two official languages and a prerequisite for admission into some state Universities. For these reasons, much attention is given to make sure that students acquire appropriate skills. In spite of all the attention given to English language teaching and learning, students not only fail assessment but also find it difficult to express themselves fluently or face difficulties to write coherently and proficiently without mistakes. Teachers on their part complain about the

student's lack of interest and motivation in writing the subject following its norms. Results of the GCE within the last three decades as observed by scholars have shown that the performance of students in English language at the GCE Ordinary Level Examination is low (Ayafor, 1996). During assessment English language performance at the secondary level is done through writing as the students are expected to write correctly what they understand and this goes a long way to affect other subjects.

Amongst other factors affecting this aspect of English language teaching is the teaching method used in the teaching of English which needs to be investigated. So far, the conventional language teaching methods which regularly used in secondary schools has been questionable. According to Solomon (2003) and Dickson et al (1998), teaching methods attract the unwilling students and create a learning environment where students with different abilities and backgrounds create a more homogenous group that influences academic achievement. One method that has not been paid much attention in the teaching of English language is PBL, literature in other context have shown that project based learning strategy is useful in teaching English language as it makes use of real-life situations which facilitates the learning of English language skills. It is against this backdrop that these researchers seek to investigate if PBL can enhance the development of writing skill among form four students in secondary schools in Fako Division of the South West Region of Cameroon.

## 2.6. Research Question

What is the effect of PBL on English Language students' development of writing skill in secondary schools?

## 2.7. Statistical Hypothesis

**H<sub>0</sub>:** There is no significance effect on English Language students' development of writing skill in secondary schools when taught using PBL and conventional teaching strategy.

## 3. Methodology

### 3.1. Research Design

The research design for this study is the pretest posttest Quasi Experimental design. Quasi Experimental design aims to establish a cause-and-effect relationship between an independent and dependent variable (Cook & Cambell, 1979). Quasi experimental does not involve randomization of subjects but the use of intact classes (Jitzi & Shafact, 2019). In quasi-experimental design the independent variable is manipulated, participants are not randomly assigned to conditions or orders to conditions.

### 3.2. Target Population

The target population of this study was made up of all the form four English language students (4694) of public secondary grammar schools in five (5) Sub Divisions in Fako Division. These Sub Divisions are Buea, Limbe I, II, III and Tiko. Table 1 presents the target population of the study.

**Table 1** Target Population of the Study

Sub Divisions No of Operational Schools		Number of Form Four Students		Number of Form Four Streams
		Male	Female	
Buea	Bilingual Grammar School Molyko	162	203	4
	Government Bilingual High School Muea	21	29	1
	Government High School Bokwaongo	135	265	4
	Government High School Bolifamba	61	81	2
	Government High School Buea Town	217	253	4
	Government High School Great Soppo	170	180	4
	Government High School Buea Rural	127	173	4

Limbe I	Government High School Bonadikombo	109	161	4
	Government High School Limbe	157	173	4
	Government Bilingual High School Limbe	175	185	4
Limbe II	Government High School Batoke	179	197	4
Limbe III	Government High School Mbonjo	76	74	2
Tiko	Government Bilingual High School Tiko	165	197	4
	Government Bilingual High School Mudeka	108	132	4
	Government Bilingual High School Mutengene	144	171	4
	Government High School Motombolombo	82	132	4
Total		2088	2606	56

Source: Regional Delegation of Secondary Education South West Region for 2023/2024 Academic Year

### 3.3. Sampling Techniques and Sample Size

Sampling techniques used for this study was a multistage sampling technique of non-probability sampling. Multistage sampling technique involves the process of selecting in systematic stages respondents who were suitable for the study. This implies that different sampling procedures were used at different levels of the study. Purposive sampling technique was used to select the sub divisions, schools and the form four from where the sample was drawn. Simple random technique was used to select the streams of form four. There was no randomization of subjects since intact classes were used during this study as the school administrators could not allow these classes to be destabilized because of this study.

The sample size of this study comprised of all form four English students from two (2) public secondary grammar schools. One public secondary grammar school was drawn from Limbe I Sub Division and 1 from Buea Sub Division. A stream was selected from the two public secondary grammar schools to constitute the experimental and the control group. The two schools were Government High School Bokwaongo and Government High School Limbe. This was to enable the researcher control environmental extraneous variable of test diffusion. Two hundred and forty (240) students from the two streams constituted the sample size of the study. The optimum sample size required for an experimental design as recommended by Coolican (1999), Gall, Borg and Gall (1996) as cited in Jitzi and Shafact (2019) is thirty (30) respondents. Going by this, it shows that the sample size of this study will be suitable. Table 2 presents the sample size of the study.

**Table 2** Sample Size of the Study

Sub Divisions	No of secondary Schools	Number of Form Four English Students	Sample Size for Students	Stream Selected
Buea	Government High School Bokwaongo	400	120	4A
Limbe I	Government High School Limbe	271	120	4A
Total		671	240	

### 3.4. Instrument for Data Collection

The study utilized an English Language Written Test (ELWT) to test the writing skills. The ELWT will be grouped into sections (Sections A and B). This helps to elicit information from students to answer the research questions, which are formulated for the study. Section A gathered demographic information on the students such as gender, form, and school. Section B was on the components of writing skills. This was a composition writing with four indicators. Each indicator had four items each. These items were a marking guide to mark the essay question.

### 3.4.1. Treatment Procedure

The selected schools for the study constituted the experimental and control groups of form four students. The treatment took a duration of twelve weeks. Experimental group was subjected to the PBL while the control group was subjected to the conventional teaching strategy.

Materials for the study was prepared by the researchers and used for both groups that is the experimental and the control groups based on the form four English Language syllabus.

- Experimental Groups: The students were taught writing skills using project-based learning. This took a period of three months. At the end of six weeks, the students were tested so that the effect of PBL could be observed.
- Control group: The students of the control group were taught using the conventional teaching strategy. This process took 3 months. That was twelve weeks. A pre-test was administered to all the students prior to the study to measure the knowledge level of the students with regards to the English language writing skills. As the treatment was going on the students were evaluated until when the final process was over. At the interval of six weeks, both groups of students were tested in order to see the progression of the effect of the PBL on the students writing skills. The treatment encompassed two posttest 1 and 2 for both the control and the experimental groups. The test results were analyzed to see the extent to which the writing skills of the students were developed based on PBL and conventional teaching strategy.

### 3.5. Method of Data Analysis

The quantitative data for this study were analyzed using both the descriptive and inferential statistics. Before the data were analyzed, data generated from the students who took part in the study were recorded on an Excel Spread Sheet. After completion, the data were exported to SPSS version 25.0 (IBM Inc., 2017) for analysis. On the SPSS software, both descriptive and inferential statistics were used. The descriptive statistical tools used were mean, standard deviation, standard mean of error, coefficient of variation, frequency count, and percentages.

The mean indicated the average performance of the students in both groups. Standard mean of error was used to estimate the upper and lower level of the true mean. The standard deviation was also used to determine how students differs in their marks score and the extent of the differences. This was further supported using the coefficient of variation for better appreciation. The coefficient of variation is a statistical parameter of dispersion which is calculated by expressing the standard deviation in percentage by diving the standard deviation by mean value and multiply by 100.

**Table 3** Test of Normality

Variable	Test level	Group	Kolmogorov-Smirnov <sup>a</sup>		
			Statistic	Df	p-value
Writing skills	Pre test	Control	0.173	121	0.051
		Experimental	0.191	121	0.009
	Post test 1	Control	0.186	121	0.027
		Experimental	0.159	121	0.031
	Post test 2	Control	0.187	121	0.029
		Experimental	0.173	121	0.051

\*. This is a lower bound of the true significance.; a. Lilliefors Significance Correction

To test the hypothesis of the study, the Independent Sample T- Test was used. This which is a parametric test was used because the data for the study was approximately at normality as shown on the table of Test of Normality with *p*-values all above 0.05. The Independent Samples T test was also used because it is a test that is applicable in comparing means between two groups as we have in this study (control and experimental groups). Testing for normality assumption of every data where inferential statistics of this nature was applied to avoid committing the type I or II hypothesis error. Finally, findings were presented using frequency distribution tables, and charts and all statistics were presented at 95% level of confidence interval with alpha set at 0.05 levels accepting, 5% margin of error. Table 3 present the normality test.

#### 4. Presentation of Findings and Discussion

The presentation of findings of this study was based on the research question and hypothesis that were proffered for this study as thus;

What is the effect of project-based learning on English Language students' development of writing skills in secondary schools?

**H<sub>0</sub>:** There is no significance effect on English Language students' development of writing skills in secondary schools when taught using project-based learning strategies and conventional teaching strategy.

**Table 4** Comparing Students Marks Score at Pretest Level in both Groups for Writing Skills without the Use of Project-Based Activities

Statistical Parameters	Groups	
	Pretest Control	Pretest Experimental
N	121	121
Mean	32.85	25.50
Median	30.00	20.00
Minimum	20	20
Maximum	70	60
Range	50	40
Std. Error of Mean	0.663	0.818
Std. Deviation	7.298	9.000
Coefficient of variation	22.2%	35.3%

Results on table 4 shows that at the pretest level where the above project-based learning strategies / exercises were not used on both groups, the mean difference was less than 8.0 which is not wide. Specifically, the mean score for students in the control group is 32.85 plus or minus 0.663 and 25.50 plus or minus 0.818 for students in the experimental group. The lowest mark score in the control group was 20, and 20 for experimental group on 80 while the highest mark scored was 70 for the control group and 60 for the experimental group. The standard deviation of 7.298 in the control group with coefficient of variation value of 22.2%, and 9.00 for the experimental group with coefficient of variation value of 35.3% above 20% implies that there was much gap (very little competition) among the students at the pretest level. However, competition was better in the control group than in the experimental.

**Table 5** Comparing Students Marks Score at Post-test Level in both Groups for Writing Skills After the Use of Project-Based Activities and Conventional Strategy

Post test levels	Statistical parameters	Groups	
		Control	Experimental
Post-test 1	N	121	121
	Mean	30.95	44.75
	Median	30.00	40.00
	Minimum	20	25
	Maximum	65	80
	Range	45	55
	Std. Error of Mean	.831	.971

	Std. Deviation	9.136	10.682
	Coefficient of variation	29.5%	23.9%
Post-test 2	N	121	121
	Mean	35.04	56.45
	Median	35.00	55.00
	Minimum	25	40
	Maximum	80	80
	Range	55	40
	Std. Error of Mean	0.736	1.057
	Std. Deviation	8.101	11.627
	Coefficient of variation	23.1%	20.6%

Results on table 5 shows that at the post-test level 1 where the above-mentioned project-based teaching strategies / exercises were used in teaching students in the experimental group only, the marks scored by students in both groups differ a lot. In the experimental group, the mean score of 25.50 at pretest increased to 44.75 plus or minus 0.971 at post-test 1 while in the control group, a slight drop was recorded. The lowest mark score in the experimental group at the post-test 1 was 25 and the maximum was 80.

At post-test 2, which was done couple of weeks after post-test 1, the mean score of the students in the experimental group increased from 44.75 to 56.45 plus or minus 1.057 almost two times higher when compared to the mean value 35.04 plus or minus 0.736 for students in the control group who were not taught using the project-based learning strategies. This confirmed that more students had passed mark at the post-test level 2 than at post-test 1 in the experimental group. In other words, the continuous teaching of the students using the project-based learning strategies enabled improvement more on the students' writing skills. In fact, the low coefficient of variation value of 20.6% at the post-test 2 than at post-test one 23.9% implies that at post-test 2, the students were more competitive in their performance than at post-test 1.

**Table 6** Rating of Students' Writing Skills at Pre-test Level Using Percentages for both Groups

Competences	Groups							
	Control pretest				Experimental pretest			
	NO	MO	O	SO	NO	MO	O	SO
Planning	30 (24.8%)	79 (65.3%)	11 (9.1%)	1 (0.8%)	88 (72.7%)	27 (22.3%)	4 (3.3%)	2 (1.7%)
Content	40 (33.1%)	73 (60.3%)	7 (5.8%)	1 (0.8%)	99 (81.8%)	18 (14.9%)	1 (0.8%)	3 (2.5%)
Organisation	61 (50.4%)	58 (47.9%)	1 (0.8%)	1 (0.8%)	96 (79.3%)	23 (19.0%)	2 (1.7%)	0 (0.0%)
Editing	69 (57.0%)	51 (42.1%)	1 (0.8%)	0 (0.0%)	97 (80.2%)	23 (19.0%)	1 (0.8%)	0 (0.0%)
<b>MRS</b>	<b>200 (41.3%)</b>	<b>261 (53.9%)</b>	<b>20 (4.1%)</b>	<b>3 (0.6%)</b>	<b>380 (78.5%)</b>	<b>91 (18.8%)</b>	<b>8 (1.7%)</b>	<b>5 (1.0%)</b>

Key: Not observed (NO); Mildly observed (MO); Observed (O); Strongly observed (SO).

Furthermore, looking at the students' performance in terms of percentages at the pre-test level, majority of students in both groups were lacking in planning, good content, good organization, and editing. Specifically, in the control group, 65.3% (79) were unable to plan properly with 72.7% (88) for those in the experimental group. Similarly, in terms of

content, 60.3% (73) of students in the control group did not have good content with 81.8% (99) for those in the experimental group. More so, 50.4% (61) of students in the control group were completely off in their organization skills with 79.3% (96) in the experimental group. Finally, 57.0% (69) of students in the control group were completely off in editing with 80.2% (97) in the experimental group.

**Table 7** Rating of Students' Writing Skills at Post test Levels Using Percentages for both Groups

Competences	Groups at post-test 1							
	Control post-test 1				Experimental post-test 1			
	NO	MO	O	SO	NO	MO	O	SO
Planning	46 (38.0%)	66 (54.5%)	8 (6.6%)	1 (0.8%)	6 (5.0%)	81 (66.9%)	27 (22.3%)	7 (5.8%)
Content	63 (52.1%)	51 (42.1%)	6 (5.0%)	1 (0.8%)	7 (5.8%)	84 (69.4%)	24 (19.8%)	6 (5.0%)
Organisation	69 (57.0%)	47 (38.8%)	4 (3.3%)	1 (0.8%)	6 (5.0%)	85 (70.2%)	24 (19.8%)	6 (5.0%)
Editing	80 (66.1%)	40 (33.1%)	1 (0.8%)	0 (0.0%)	11 (9.1%)	84 (69.4%)	20 (16.5%)	6 (5.0%)
MRS	258 (53.3%)	204 (42.1%)	19 (3.9%)	3 (0.6%)	30 (6.2%)	334 (69.0%)	95 (19.6%)	25 (5.2%)
	Groups at post-test 2							
	Control post-test 2				Experimental post-test 2			
Planning	8 (6.6%)	95 (78.5%)	17 (14.0%)	1 (0.8%)	0 (0.0%)	24 (19.8%)	73 (60.3%)	24 (19.8%)
Content	24 (19.8%)	89 (73.6%)	6 (5.0%)	2 (1.7%)	0 (0.0%)	35 (28.9%)	62 (51.2%)	24 (19.8%)
Organisation	53 (43.8%)	62 (51.2%)	5 (4.1%)	1 (0.8%)	0 (0.0%)	49 (40.5%)	47 (38.8%)	25 (20.7%)
Editing	78 (64.5%)	38 (31.4%)	4 (3.3%)	1 (0.8%)	0 (0.0%)	72 (24.0%)	29 (24.0%)	20 (16.5%)
MRS	163 (33.7%)	284 (58.7%)	32 (6.6%)	5 (1.0%)	0 (0.0%)	180 (37.2%)	211 (43.6%)	93 (19.2%)

Key: Not observed (NO); Mildly observed (MO); Observed (O); Strongly observed (SO).

Based on table 7, in terms of percentage, generally, at the post-test 1 in the experimental group, 6.2% of students did not convincingly demonstrate the writing skills while 69.0% demonstrated that mildly, and 24.8% properly. However, at the post-test 2 after the continuous use of project-based learning strategies, a significant improvement was observed with the students in the experimental group with students 62.8% demonstrated writing skills properly than before. However, for students in the control group, no significant change was observed.

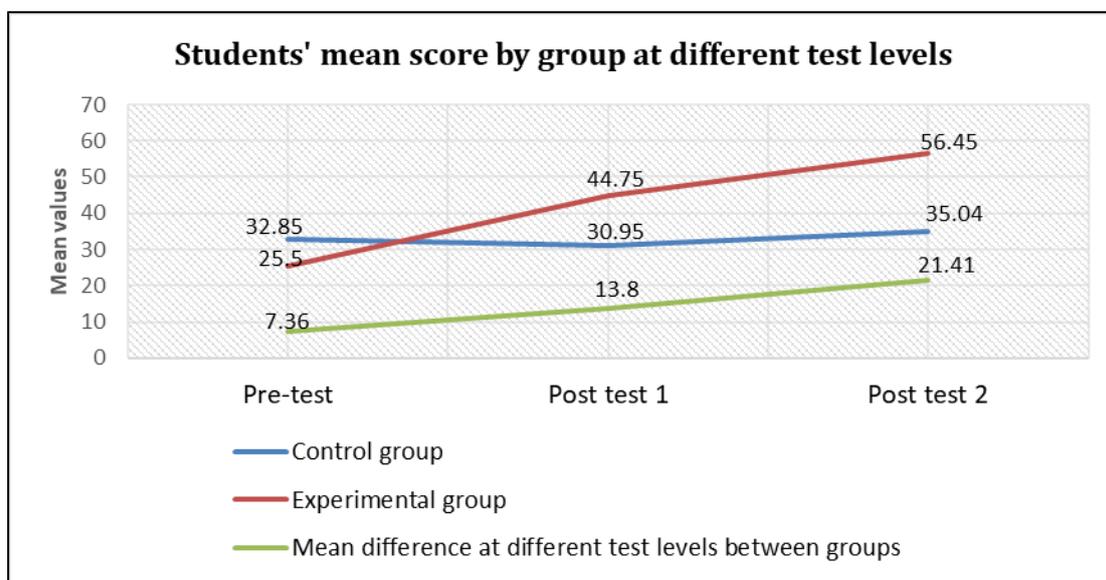
#### 4.1. Testing of Hypothesis

**H<sub>0</sub>:** There is no significance effect on English Language students' development of writing skills in secondary schools when taught using project-based learning strategies and conventional teaching strategy.

**Table 8** Comparing the Differences in Students' Developing in Writing Skills by Groups and Test Levels after Exposure to Project-Based Teaching Strategies

Test level	Group	Group Statistics				Test
		N	Mean	Std. Deviation	Std. Error Mean	
Pretest	Control	121	32.85	7.298	.663	t=6.983 p-value <0.001
	Experimental	121	25.50	9.000	.818	
Posttest 1	Control	121	30.95	9.136	.831	t=10.801 p-value <0.001
	Experimental	121	44.75	10.682	.971	
Posttest 2	Control	121	35.04	8.101	.736	t=16.616 p-value <0.001
	Experimental	121	56.45	11.627	1.057	

T-test value for equal variance not assumed, t-calculated all greater than critical t-value of 1.97 at df=240, CI 0.05 level. Mean difference at pre-test 7.355, post-test 1 = 13.802, Post test 2 = 21.405



**Figure 1** Comparing the Differences in Students' Developing in Writing Skills by Groups and Test Levels after Exposure to Project-Based Teaching Strategies

Statistically, the results revealed that the use of project-based learning strategies in teaching students in the experimental group only, significantly improve on their acquisition of writing skills (Calculated t-values 10.801-16.616 >critical value of 1.97, and p-values < 0.001). At the pre-test level, the mean difference between the control and experimental group was just 7.355 (Mean control group = 32.85; experimental 25.00). However, after the use of project-based learning strategies at post-test 1, the mean difference increased drastically to 13.802 (Mean control group = 30.95; experimental 44.75). Finally, at post-test 2, the mean difference widened from 13.802 to 21.405, with students in the experimental group scoring a high mean of 56.45 almost two times higher when compared to the mean of 35.04 for students in the control group. Thus, the hypothesis that states there is a significance effect on English Language students' development of writing skills in secondary schools when taught using project-based learning strategies and conventional teaching method was accepted.

The results of this question revealed that the use of project-based learning method in teaching students significantly improved on the development of their writing skills.

In terms of testing of the hypothesis of this study, the hypothesis which states: there is a significance effect on English Language students' development of writing skills in secondary schools when taught using project-based learning strategies than when using conventional teaching method was accepted.

This result exposes the fact that in a project-based learning classroom, there is much collaboration and teamwork, responsible time keeping and peer tutoring as the students work together in collaboration. Furthermore, in the process of learning how to write, students develop and improve on creativity skills as they produce short stories and essays on their own with the teacher only as their guide. During this process of project-based learning, students develop critical thinking skills and efficient time management skills as they are given as a limited time to think, research come up with their assigned tasks. By creating passages, write-ups, and essays, students improve on their vocabulary, coherence, logical and organization skills. This in a nutshell goes a long way to improve on their writing skill.

The findings of Cole and Feng (2015) in their study revealed that there is a significant effect of project-based learning on students' productive skills such as the writing skills. Furthermore, the study by Ni Komang, Luh, & Dewa (2021) corroborates with the finding of this study. In the same vein, the study findings of Hakimah (2023) also supported the findings of this study as he found out that the effectiveness of PBL enhances students' writing skills within the context of procedure text. In addition to that, the findings of a study carried out by Arochman, Margana, Ashadi, Achmad, Nugrahaeni & Baihaqi (2024) entitled the effect of project-based learning on English language writing skills for EFL learners in Universitas Tidar, is also in line with the result of this study. They found out that project-based learning significantly influences students' English language writing skills. The result of this study is supported by the theory of constructivism especially that of Lev Vygotsky (1978) theory of social constructivism. Vygotsky emphasizes the role of social interaction of their learning contexts with all its possibilities and limitations. They construct knowledge by working as teams with each member of the team with their unique capabilities. In Project-based learning, students engage in realistic problems and develop good writing skills. Mulligan and Garofalo (2011) and Cárdenas and Inga (2021) reiterated that collaborative writing enhances students' writing and lowers anxiety associated with completing the task alone. Thus, in order for learners to benefit from the activities, they should be allowed to construct knowledge that is meaningful to them.

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## 5. Conclusion

The study conclude that project-based learning significantly improved secondary schools' students writing skills in English Language in Fako Division of the South West Region of Cameroon based on the following indicators: grammar, vocabulary, content, planning, organization, and editing.

### *Recommendation*

It was recommended based on the results of this study that English language teachers in secondary schools should effectively use PBL as a suitable English language strategy for students to develop writing skills. PBL also builds students' team work skills, increase students' problem-solving skills, and stimulates students to be active, communicative, creative, and innovative.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

The authors declare no conflicts of interest regarding the publication of this paper.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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