

## The Impact of Inquiry-Based Learning (IBL) on the Expository Writing Skills of Learners in Nigeria: An Experimental Study on Improving Writing Structure and Organization

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### Abstract

**Background:** The Nigerian English language curriculum for writing mostly encourages a teacher-centred approach whereby the teacher simply gives writing task to students and leave them to figure it out on their own. This leaves many of the students stuck and thereby losing interest in English composition.

**Objective:** This study hereby investigates how Inquiry-Based Learning (IBL) impacts the writing performance of secondary school students in Nigeria to see if a more student-centered approach might change the students' perspective and performance. The study specifically focuses on organization and structure in expository writing. It primarily aims to determine whether using a student-centred approach like IBL can improve students' writing performance.

**Methods:** A seven-week experimental study was conducted, and this involved an experimental group that was taught using IBL strategies and a control group that received traditional instruction. At the beginning of the study, each group consisted of 20 students, making the initial sample size 40. However, only 10 students from each group completed both the pre-test and post-test, which resulted in 20 valid responses. This reduction was largely because of the students' motivation and attitudes toward the process, which affected their participation. Data collection included pre-tests and post-tests to assess students' writing performance.

**Findings:** The results of the experiment underscore that no significant differences were observed between the performance of the experimental and control group. While IBL did not lead to measurable improvements in students' ability to organize and structure expository essays, the study highlights the value of active student engagement in the learning process.

**Conclusion:** The findings suggest that the results may differ with a larger sample size and a longer period of intervention.

**Keywords:** expository writing; inquiry-based learning; writing skills; secondary school



## Introduction

For effective communication, we use four language skills: reading and listening (receptive skills) to understand information; writing and speaking (productive skills) to convey our own thoughts. Writing allows for unique and individualized expression of ideas (Hamid et al., 2021). Effective writing skills are essential for academic success and future careers, while weak writing skills can hinder students' academic, social, and professional development (Moses & Mohamad, 2019).

However, this important skill is often regarded as the most complex by many Nigerian students, who struggle to structure their thoughts and communicate them effectively. Traditional teacher-centred approaches used in most English classrooms have done little to improve students' competence in this area. This has prompted a shift towards more student-driven methods such as Inquiry-Based Learning (IBL), where learners actively engage by formulating questions, conducting research, and drawing conclusions.

In many Nigerian schools, English language instruction still depends heavily on textbooks and teacher-led activities, with little room for student participation. While these methods can support certain aspects of language development, they often fall short in fostering the critical thinking abilities needed for higher education and the workforce. The current curriculum may also discourage learners from becoming independent thinkers who explore language through inquiry and investigation.

Critical thinking is a crucial 21st-century skill, yet it is often underdeveloped in traditional classrooms where instruction is teacher-led, and content delivery is passive. IBL supports the development of this skill by encouraging students to ask questions, analyze information, and reflect on their findings. Recent research confirms that IBL significantly promotes critical thinking. A meta-analysis reported a large effect size (1.27) for IBL in enhancing students' critical thinking skills when supported by proper scaffolding (Arifin, Sukarmin, Saputro & Kamari, 2025). Similarly, an Indonesian EFL study found that inquiry learning



improved learners' critical thinking components within writing tasks (Juansyah, Arono, & Yunita, 2024).

Unlike conventional methods that render students as passive recipients of knowledge, Inquiry-Based Language Learning (IBLL) encourages them to actively construct meaning, creating a more engaged learning environment (Iwe, Chidi-Onwuta & Chikamadu, 2022).

Rooted in constructivist theory—which states that learners build knowledge through personal experience—IBL gives students more control over their learning. It prioritizes exploration over direct instruction (Wale & Bishaw, 2020). Teachers provide scaffolding to help learners question, investigate, and make sense of the world around them.

As a component of Communicative Language Teaching, IBL drives language acquisition through active investigation and inquiry (Wale & Bogale, 2021). It emphasizes hands-on tasks and collaborative problem-solving, allowing students to gather information, analyze it, and construct explanations based on their findings. Through reflection and discussion, learners then communicate their discoveries in meaningful ways.

Building on this, IBL has gained global recognition as an innovative method in language education. Studies have shown its effectiveness in enhancing writing across various contexts. For example, Amelia and Prystiananta (2021) found that IBL significantly improved descriptive writing among junior secondary students in Indonesia. Similarly, Gómez Morocho and Pérez Lema (2022), reviewing 20 studies from Ecuador, concluded that IBL enhances vocabulary, structure, and critical thinking in EFL writing. Kasmaini and Zahrida (2020) reported that repeated use of IBL strategies helped university students improve their narrative writing scores in successive learning cycles.

In the Nigerian context, Iwe, Chidi-Onwuta, and Chikamadu (2022) demonstrated that IBL significantly enhanced undergraduate students' written and oral communication. Students showed notable improvements in content development, coherence, and clarity—suggesting that IBL may be especially effective in supporting learners who struggle with written expression and idea organization.



While Nigerian research on IBL has largely centred on STEM (Science, Technology, Engineering, and Mathematics), there has been limited exploration of its application in language education. This study addresses that gap by investigating the effect of IBL on expository writing skills among Nigerian secondary school students. It aims to determine whether IBL improves writing performance—particularly in areas such as content organization and idea development—compared to traditional methods.

This focus on IBL in English writing is important, as many Nigerian students face challenges expressing their thoughts clearly and coherently in written form. Conventional methods, which emphasize memorization and grammar drills, often restrict creativity and engagement. In contrast, IBL promotes critical thinking, discovery, and active language use. These features make it particularly suitable for developing writing skills, especially in helping learners generate and organize their own ideas.

By examining the effectiveness of IBL in improving writing outcomes, this study hopes to contribute to addressing the urgent need for improved English language instruction in Nigeria.

### Literature Review

*“Tell me and I forget. Teach me and I remember. Involve me and I learn”* – Benjamin Franklin.

The theoretical framework of this study is grounded in the principles of constructivism. According to this theory, learning is a process of creating meaning through personal experiences and interactions. Constructivists believe that learners actively build their own understanding instead of simply taking in information. From the perspective of constructivism, learning is a process of building knowledge using the **tools** and **materials** the learners can access (Taber, 2019). Taber explains that tools refer to learners’ cognitive abilities and the strategies they use to process and understand information, while materials refer to the learners’ existing knowledge and experiences.

The popular quote by Benjamin Franklin: “Tell me and I forget. Teach me and I remember. Involve me and I learn” concisely explains the idea of constructivism in learning as it points to



the fact that learners learn better when the instructional process revolves around them, rather than the teacher, as perceived in the traditional classroom.

Inquiry-based learning (IBL) aligns with constructivism by placing students as active players in their own learning processes. Through IBL, learners not only acquire knowledge but also engage in critical thinking and self-reflection, which helps their ability to apply new information meaningfully; this student-centered approach makes IBL an effective method for language learning.

### **An Overview of Inquiry-based Learning and Its Effectiveness in Language Learning**

It is a student-centred approach to teaching, which allows students to learn by asking questions, conducting research and deeply exploring topics. Unlike traditional methods where learners are passive in the classroom because the teacher gives out most of the information, IBL encourages active engagement, where students build their knowledge through structured inquiry. In language learning, IBL helps to bridge the gap between what is learnt in the classroom and real-world application. Language is a tool for exploring and expressing ideas, so the exploratory nature of IBL makes it easier to achieve the communicative competence – which should be the goal of every language learning.

Moreover, IBL focuses on critical thinking and self-directed learning and thereby offering a foundation for students to develop higher-order language skills, such as argumentation and expression, making it especially effective for writing instruction.

Wale and Bishaw (2020) define IBL as a “hands-on learning method that encourages students to explore, investigate, and construct knowledge through a series of steps including observation, questioning, data collection, analysis, and communication”. Likewise, Spronken-Smith (n.d.) describes it as a pedagogical approach that prioritizes student-centred inquiry, self-directed learning, and active engagement to facilitate a meaningful understanding of knowledge creation.

Although inquiry-based learning is student-centered, teachers still play a vital role in guiding students through the process. Teachers should provide appropriate topics, plan objectives, and ensure students use reliable resources. They should also enable collaborative learning environment and encourage diverse perspectives among learners (Shanmugavelu et al., 2020).



Furthermore, the stages involved in implementing Inquiry-based Learning in the classroom are well spelt out; this gives the facilitator (teacher) and students a clear understanding of what should be done at each point of the lesson. According to Ermawati and Pammu (2017), the stages involve engagement, exploration, explanation, elaboration, and evaluation. Through these stages, students actively learn by engaging with new concepts, exploring ideas, receiving guidance, applying their understanding, and reflecting on their learning journey.

“In the IBL classroom, students actively construct knowledge by independently exploring questions and combining their prior knowledge with research, guided by their teacher, technology, and peers” (Rejeki, 2017). This approach positions the teacher as a facilitator who creates a learning environment where students work together to discover and understand new things.

According to Shanmugavelu et al. (2020), IBL emphasizes four main aspects, namely: “process-oriented-not content, emphasis on concept-not facts, student-centred, and non-passive learning”. This method focuses on the **process** of learning rather than the **content** of knowledge (Shanmugavelu et al., 2020).

While IBL is often associated with scientific inquiry, it can also be applied to language learning as well (Wale and Bishaw, 2020). Rejeki (2017) mentioned that although science and language are different, the use of scientific principles in learning foreign languages can have a positive effect. Similarly, Lee (2014, cited in Hasan, 2018) emphasizes the relevance of IBL in language learning and explain that Inquiry-based Learning can be classified as one of the applicable questioning techniques in EFL or ESL contexts.

Studies have shown that Inquiry-based Learning (IBL) can effectively improve various aspects of English language learning. For instance, Sari and Wati (2017) investigated how Inquiry-based learning could affect the reading ability of students, and there was a significant difference in the pre-test and post-test scores of students who received the IBL intervention. A study carried out by Wale and Bishaw in 2020 also examined the effect of using IBL on the critical thinking skills of some EFL students. The study revealed that Inquiry-based argumentative writing instruction



effectively improves students' critical thinking skills by helping their ability to 'interpret, analyze, evaluate, infer, explain, and self-regulate'.

Also, Iwe et al (2022) investigated the effect of Inquiry-based Learning on Nigeria Students' oral and communication skills, and the results suggest IBL as "a cognitive and language learning enhanced- approach that should replace the traditional lecture method as found in most ESL/EFL classrooms".

In a publication authored by Oxford University Press ELT (2020), four key principles of IBL were pointed out. (1) **Students as Researchers:** Teachers can introduce open-ended questions to spark student inquiry and provide resources for exploration. (2) **Teachers as Research Assistants:** Teachers can provide instructional videos and support student learning during class time. (3) **Peer-to-Peer Collaboration:** Teachers can create online discussion boards for peer interaction and assign group projects for collaborative learning. (4) **Reflecting on Learning:** Teachers can use reflective questions and assessment feedback to help students assess their progress and identify areas for improvement.

### Writing as a Language Skill: Its Importance and Challenges faced by Learners in EFL/ESL Contexts

English language is the most widely learned foreign language and learning the language skills helps individuals evolve with the changing times. Writing is one of the four language skills in English and its importance cannot be overemphasized. It is one of the two productive language skills that manifest what the learner has been able to receive through reading and listening English. A student who is good at writing not only gets good grades, but also excels in the professional world (Bora,2023). According to Lee and Schmidgall (2020) writing generally serves as a core medium for communication and activity in the workplace.

Despite its importance, writing is found to be the least liked and most difficult skill among English learners. According to Anh (2019), writing is typically the final language skill acquired after listening, speaking, and reading, but despite being the last skill learned, it's often considered the most challenging for language learners.



## The Role of IBL in Improving Writing Skill

Notably, writing requires linguistic mechanics such a grammar, vocabulary, syntax, and organization. EFL learners find it challenging to apply grammatical rules accurately, construct grammatically correct and syntactically sound sentences, select appropriate vocabulary to convey their meaning precisely, and organize their ideas in a coherent and logical manner. Anh (2019) carried out a study to investigate the challenges faced by EFL students at a college. The findings of the study showed that the major problems in student's writing are the lack of vocabulary, the limited knowledge of grammar and insufficient writing skills. These elements make writing a challenging skill, especially in EFL/ESL contexts, where learners must deal with them in a non-native language.

Inquiry-Based Learning (IBL) addresses these challenges by providing an environment where students can develop their ideas through research, rather than rote memorization of language rules. IBL cultivates the skills essential for writing by encouraging students to investigate topics deeply, ask questions, and reach conclusions by themselves. This approach assists learners to better understand and use language structures, which can improve coherence, organization, and clarity in their writing.

Critical thinking is a key skill for effective writing because the writing process demands students to question, analyze, and form their own conclusions. Suteja and Setiawan (2022) point out that the quality of a student's writing reflects their ability to think critically. Inquiry-based Learning (IBL) helps to develop this important skill by encouraging students to actively engage with the learning material.

Wale and Bishaw (2021) studied the use of IBL instruction in argumentative writing and found it to improve students' critical thinking skills. Therefore, IBL may be a potential solution for helping students who struggle to generate ideas or lack the ability to analyze and form arguments in their writing.

Additionally, a research study by Wale and Bogale (2021) examines the impact of inquiry-based writing instruction on the academic writing skills of first-year pharmacy students. The study identifies the ineffectiveness of traditional teaching methods, which often lead to students



struggling with key writing elements such as coherence, task achievement, and grammatical accuracy. The research employs a quasi-experimental design with a pretest-posttest approach, and it shows that students who engaged in inquiry-based instruction significantly improved their writing skills compared to those who were taught through conventional methods.

### Potential Challenges of Integrating IBL

While IBL has proven to be beneficial, it is not without limitations, irrespective of the subject it is taught with. Generally, implementing IBL could be interrupted by lack of adequate resources, teacher training, and students' perspective. In a study carried out by Roslan, Phang, Puspanathan and Nawi (2023), they found out that physics teachers faced both intrinsic and extrinsic challenges in the use of IBL to teach physics. The intrinsic challenge included lack of experience with IBL while the extrinsic challenges had to do with lack of adequate resources, time restrictions and students' lack of self-efficacy in using IBL.

Iwe et al. (2022) highlight that students must be well-motivated for them to participate in an inquiry that will bring about meaningful results. They also mention that the unavailability of technology and other resources needed to carry out IBL in the classroom could also lead to practical challenges in the learning environment.

Similarly, Al-Maharma and Abusa'aleek (2022) identify in their study that the lack of availability of reading materials and poor development of relevant materials are the significant challenges with IBL in Jordan EFL classroom.

These challenges are present in the Nigerian educational context, where resource limitations, such as insufficient access to technology and classroom materials can affect the implementation of IBL. In addition, many teachers in Nigeria lack specific training in IBL methods, and this makes it essential to provide adequate support and professional training to ensure that IBL can be used effectively. Student cooperation in the classroom may also be a challenge because they are mostly used to the conventional methods of teaching and learning.

In conclusion, Inquiry-Based Learning (IBL) provides an engaging process that encourages active engagement, critical thinking, and meaningful learning in language education.



However, to succeed with the usage in the classroom, some challenges such as resource unavailability, teacher's lack of experience and student motivation need to be addressed and overcome.

## Method

### Research Design

This study employed a quasi-experimental design. According to Rogers (2020), the quasi-experimental design is suitable for educational research where random assignment is not feasible. For this study, the design included pretest and post-test measures to assess the impact of IBL on students' writing skills. The study is designed to investigate the following research questions: (1) Is there a significant difference in the organization of expository writing as reflected in the pre-test and post-test scores of the control and experimental groups? (2) Is there a significant difference between the control and experimental groups in the organization of expository writing as reflected in the post-test scores?

### Population and Sample

The target population for this study comprised Grade 11 students (also known as Senior Secondary School 2 or SS2) in Nigeria. These students are typically aged between 15 and 17 and are in their penultimate year of secondary education. By this stage, they have received approximately 10 to 11 years of formal English language instruction, beginning from primary school. English serves as the medium of instruction across all subjects in most Nigerian schools, and it is a compulsory subject throughout the basic and senior secondary school curriculum.

The English language curriculum in Nigeria is structured to develop learners' proficiency across the language skills, most especially in reading and writing. At the SS2 level, students are expected to demonstrate competence in various forms of writing such as narrative, descriptive, expository, argumentative, and letter writing (both formal and informal). However, despite long-term exposure to writing instruction, many students still struggle with writing fluency, idea development, grammar, and coherence. These challenges called the need for alternative instructional methods such as Inquiry-Based Learning (IBL), which this study investigates.



The study was carried out in **Adedokun** International School, Ogun State, Nigeria. This choice was influenced by the school's accessibility at the time, the large population of students, as well as the school's willingness to accommodate the study within its academic schedule. Grade 11 students were selected because Grade 10 students are new to the senior secondary system, while Grade 12 students are typically focused on final exam preparations. Therefore, Grade 11 was considered the most appropriate group for this study.

Initially, 40 SS2 students from the selected school were recruited for the study using a purposive sampling method. However, due to varying levels of commitment throughout the intervention, only **20 students** successfully completed both the pre-test and post-test stages. These 20 students formed the final sample for data analysis.

### Research Instruments

Two main instruments were used in this study: (1) **Writing Prompts**: Students were given specific prompts to write expository essays for both the pretest and post-test. (2) **Scoring Rubric**: The researcher used a rubric (See Appendix 2) to grade the organization of the students' essays. The rubric assessed various aspects of organization such as paragraph organization, coherence and flow and body development. It was used to mark and score the essays to provide a consistent and objective measure of students' writing organization.

### Procedure

The study was conducted over 7 weeks. The procedure included the following steps:

1. **Pretest**: At the beginning of the study, students were given a writing prompt and asked to write an expository essay. The essays were collected and scored using the rubric.
2. **Traditional Teaching and Implementation of Inquiry-Based Learning (IBL)**:

Over the course of 5 weeks, the IBL approach was integrated into the students' regular writing instruction. The study involved two groups: a control group and an experimental group.



- **Control Group:** The control group was taught using the conventional teaching method. The teacher provided direct instructions to this group and assigned tasks for the students to complete.
- **Experimental Group:** The experimental group was taught using the Inquiry-Based Learning (IBL) approach. This method encouraged students to learn independently while the teacher served as a facilitator and guide. The IBL sessions included group discussions and in-class research activities.

Students in the experimental group had specific tasks, such as:

- Identifying different types of expository essays.
- Creating outlines for given essay topics.
- Analyzing sample essays and collaboratively organizing ideas for writing.

These tasks were designed to help students focus on the structure and organization of expository essays.

Due to the lack of internet access in the classroom, the researcher prepared printed materials related to the topics of study and distributed the resources to the groups for their in-class research activities. This ensured that students could engage in the inquiry process effectively despite the challenge with technology.

These printouts included: (1) Articles explaining expository essays and their types. (2) Guides on creating outlines and organizing ideas. (3) Step-by-step instructions on writing an expository essay, with an emphasis on organization and structure.

**Post-test:** At the end of the study, students in both groups were given a new writing prompt and asked to write another expository essay. The essays were collected and scored using the scoring rubric.

## Data Analysis

A quantitative analysis was done to compare the organization scores from the pretest and post-test essays of both the control and experimental groups. The study used this analysis to see if the



use of the Inquiry-Based Learning (IBL) approach led to significant improvements in the students' essay organization skills.

## Findings

The two research questions are answered separately to derive findings.

**Is there a significant difference in the organization of expository writing as reflected in the pre-test and post-test scores of the control and experimental groups?**

The researcher attempted to use IBL techniques to improve the structure and organization of the experimental group. This implementation involved group tasks, and guided research activities. On the other hand, the control group received traditional instruction where the teacher passed on most of the information. The different approach to teaching the two groups form the basis for comparison in this study.

Both the control group and the experimental group took pretests and post-tests to help the researcher assess the organization of their expository writing. The results are presented below

## Descriptive Statistics

Table 1 presents the mean, standard deviation, and standard error for the pretest and post-test scores of both groups.

**Table 1. Paired Samples Descriptive Statistics for Control and Experimental Groups**

Group	Test	Mean	N	Std. Deviation	Std. Error Mean
Control	Pretest	10.50	10	2.64	0.83
	Post-test	12.50	10	3.31	1.05
Experimental	Pretest	11.50	10	2.55	0.81
	Post-test	11.90	10	3.48	1.10

- The mean post-test score for the control group ( $M = 12.50$ ,  $SD = 3.31$ ) was higher than the pretest score ( $M = 10.50$ ,  $SD = 2.64$ ), suggesting slight improvement.



- The mean post-test score for the experimental group ( $M = 11.90$ ,  $SD = 3.48$ ) was also slightly higher than the pretest score ( $M = 11.50$ ,  $SD = 2.55$ ), though the difference appears minimal.

To further investigate the relationship between pretest and post-test scores, a correlation analysis was conducted.

### Correlation Analysis

A correlation analysis was conducted to examine the relationship between pretest and post-test scores for both groups.

**Table 2. Paired Sample Correlation for Control and Experimental Groups**

Group	N	Correlation (r)	Sig. (p-value)
Control	10	-0.019	0.958
Experimental	10	-0.069	0.850

- The control group showed a weak and non-significant correlation ( $r = -0.019$ ,  $p = 0.958$ ), indicating little to no relationship between pretest and post-test scores.
- The experimental group also exhibited a weak and non-significant correlation ( $r = -0.069$ ,  $p = 0.850$ ), suggesting that students' post-test performance was not strongly linked to their pretest scores.

### Paired Samples t-Test Results

A paired samples t-test was conducted to determine whether the differences in pretest and post-test scores for both groups were statistically significant.

**Table 3. Paired Samples t-Test Results for Control and Experimental Groups**

Group	Mean	SD	SD Error Mean	95% CI (Lower)	95% CI (Upper)	t-value	df	p-value
Control	-2.00	4.27	1.35	-5.03	1.03	-1.482	9	0.173
Experimental	-0.40	3.91	1.24	-3.36	2.56	-0.284	9	0.783



For the control group, the mean difference was -2.00 (SD = 4.27, SE = 1.35), with a 95% confidence interval of [-5.03, 1.03]. The t-test yielded  $t(9) = -1.482$ ,  $p = 0.173$ . Since  $p$  is greater than 0.05, the difference is not statistically significant.

On the other hand, the mean difference of the experimental group was -0.40 (SD = 3.91, SE = 1.24), with a 95% confidence interval of [-3.36, 2.56]. The t-test yielded  $t(9) = -0.284$ ,  $p = 0.783$ . Again, since  $p$  is greater than 0.05, the difference is not statistically significant.

While the mean scores of the experimental group showed a slight increase after the intervention, the improvement was not statistically significant. This contrasts with findings from Ybanez and Barcelona (2024), who reported substantial improvement in writing performance through Inquiry-Based Learning. The difference in outcomes may be due to factors such as intervention duration, sample size, or implementation methods. Unlike the current study, Ybanez and Barcelona (2024) implemented their inquiry-based learning intervention over a longer duration and with a larger sample. Their participants demonstrated marked progress not only in organization but also in grammar and content development.

Nevertheless, the slight improvement observed in this study—despite not being statistically significant—may still hint at the potential of IBL when given adequate time and support. In other words, the inquiry-based learning approach has potential benefits for writing organization, but the duration or intensity of the intervention might not have been sufficient to yield a statistically significant effect. Additionally, learners may require more time to internalize and apply organizational structures effectively, particularly if they are accustomed to traditional instructional formats.

In summary, while both groups showed some level of progress from pretest to post-test, the observed differences were not statistically significant. Having assessed the within-group changes, the study also aimed to explore between-group differences in post-test performance to assess the direct impact of the intervention. The results are discussed in the next section.



**Is there a significant difference between the control and experimental groups in the organization of expository writing as reflected in the post-test scores?**

The descriptive statistics for the control and experimental groups are presented in Table 4. The control group had a mean test score of 12.50 (SD = 3.31), while the experimental group had a mean test score of 11.90 (SD = 3.48). This indicates a small difference in average scores between the two groups.

**Table 4. Average Score in Control and Experimental Groups**

Group	N	Mean	Standard Deviation	Standard Error Mean
Control	10	12.50	3.31	1.05
Experimental	10	11.90	3.48	1.10

#### **Assumption Testing (Levene's Test for Equality of Variances)**

Before conducting the independent samples t-test, Levene's Test for Equality of Variances was performed to check whether the variance in post-test scores was equal between the two groups. The results of Levene's Test showed  $F(18) = 0.000$ ,  $p = 1.000$ , indicating that the assumption of equal variances was met. Since the p-value (1.000) is much greater than 0.05, we assume equal variances in further analysis.

**Table 5. Levene's Test for Equality of Variances**

Test	F	Sig. (p-value)
Levene's Test for Equality of Variances	0.000	1.000

Since the assumption holds, we will interpret the equal variances assumed row in the independent samples t-test.

#### **Independent Samples t-Test Results**

To determine if there was a statistically significant difference in the organization of expository writing as reflected in post-test scores between the control and experimental groups, an independent samples t-test was conducted.



The results of the t-test showed that there was no statistically significant difference between the post-test scores of the two groups,  $t(18) = 0.395$ ,  $p = 0.697$ . The mean difference was 0.60, with a 95% confidence interval of (-2.59, 3.79). This suggests that the observed difference is likely due to chance.

**Table 6. Independent Samples t-Test Results**

t-test for Equality of Means	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval
Equal variances assumed	0.395	18	0.697	0.600	1.518	(-2.59, 3.79)
Equal variances not assumed	0.395	17.955	0.697	0.600	1.518	(-2.59, 3.79)

**Based on the results, the findings show that:** (1) The control group had a slightly higher mean post-test score (12.50) than the experimental group (11.90). (2) However, the difference was not statistically significant ( $p = 0.697$ ). (3) The confidence interval (-2.59 to 3.79) includes zero, which further confirms that the observed difference is likely due to chance.

Overall, the results suggest that the use of IBL did not lead to a significant improvement in the organization of expository writing. This means that other factors such as instructional methods, duration of intervention, or individual student differences may have influenced the outcomes.

Future studies could focus on finding out the long-term effects of inquiry-based learning on writing skills across diverse student populations by paying more attention to the instructional duration and using a larger sample size.



## Discussion

This study aimed to determine whether the inquiry-based learning (IBL) approach could improve the organization and structure of expository writing among secondary school students. Specifically, it compared the effects of IBL to traditional instructional methods on students' writing performance in a Nigerian secondary school.

The first question examined whether there was a significant difference in the organization of expository writing between the pretest and post-test scores of grade 11 students in the control and experimental groups.

Previous studies have proven the positive impact of IBL in enhancing writing skills. Isra and Asrobi (2016) found that inquiry-based learning helped greatly in improving the writing skills of eighth-grade students. This was shown by higher post-test scores following the use of IBL in the classroom. Similarly, Ahmed (2022) found out that the inquiry-based learning method had a significant effect on EFL students' writing performance. These findings are supported by constructivist learning theories which explain that students learn best through active engagement and interaction with their environment and peers. In IBL settings, students learn through guided discovery and problem-solving, and this creates deeper cognitive engagement and improved learning outcomes across subjects, including language learning.

However, the findings of this current study show that both the control and experimental groups showed slight improvements in their post-test scores compared to their pre-test scores, but these differences were not statistically significant. The p-values for both groups were greater than 0.05, suggesting that the observed increases in scores could have occurred due to chance rather than the intervention itself.

This finding implies that the instructional approach used in the experimental group did not lead to a significant improvement in students' ability to organize expository writing when compared to the traditional method used in the control group.

The difference in outcome from earlier studies could be attributed to contextual factors. This study was conducted in a resource-limited Nigerian school where students had limited exposure to learner-centred approaches. Students may have initially struggled with the autonomy



and responsibility that IBL requires. Moreover, unlike in some other contexts where IBL was reinforced across multiple subjects or over a semester, this study's six-week intervention might not have been long enough to show measurable gains in writing organization.

Another possible explanation for the lack of statistically significant results is the small sample size ( $n = 10$  per group). With such a limited number of participants, detecting subtle but meaningful changes becomes challenging, even if improvements are present in practice. Future studies should consider increasing the sample size to enhance the reliability and generalisability of results.

The second question checks if there is a significant difference in the post test scores of students in the control and experimental group.

The second research question focused on whether there was a significant difference in post-test scores between the control and experimental groups. Results from the independent samples  $t$ -test ( $t(18) = 0.395$ ,  $p = 0.697$ ) confirmed no statistically significant difference in post-test scores between the control and experimental groups. This further indicates that the IBL approach did not produce greater improvement in expository writing organization compared to traditional instruction.

This suggests that the instructional method introduced in the experimental group did not lead to a significantly greater improvement in students' organization of expository writing compared to the control group.

This finding could be attributed to the short duration of the intervention—six weeks with lessons lasting 40 minutes. Mastering the organization of expository writing may require more prolonged and repeated practice. Furthermore, students unfamiliar with IBL might need an adjustment period before they can fully engage with and benefit from this approach. Some students in the experimental group showed low interest in the new method, most likely because it is different from what they were used to. Their lack of enthusiasm could have affected the impact of the IBL approach.

Additionally, the research was limited to printed materials provided by the researcher due to the students' lack of access to digital resources in the classroom. Although the materials



were carefully selected, they may not have offered the same depth as real time digital resources. In some other studies where IBL yielded more significant improvements, students had access to multimedia content, online databases, and collaborative digital tools.

Another factor that may have affected the results was the level of student participation during the post-test. Many of the students were uncooperative, possibly due to their unfamiliarity with the researcher and the whole process. This might have influenced their performance and the overall outcome of the study.

Furthermore, the study was conducted in only one secondary school out of many in Nigeria. This limits the generalizability of the findings because students from other schools may respond differently to the intervention. As stated earlier, future studies could use and benefit from larger sample sizes across multiple schools to ensure generalizability of findings and make them more applicable.

Despite the lack of statistically significant results, this study still offers valuable insights. It highlights the challenges of implementing innovative instructional methods like IBL in contexts where students and teachers are more familiar with traditional approaches and changing to a new instructional approach requires time, training, and support for both students and educators.

## Conclusion

In conclusion, this study did not find statistically significant evidence to support the effectiveness of IBL in improving the organization of expository writing. However, it suggests that with adequate resources, time, and training, IBL has the potential to enhance students' writing skills. More comprehensive and long-term studies are recommended to deeply explore the potential of IBL in improving students' writing performance, especially in contexts like Nigeria with limited access to digital tools and where traditional approach to instruction remains dominant.



Future research may address the limitations of this study by increasing the sample size and extending the study period. Finally, including qualitative data such as student interviews and teacher reflections could provide a more in-depth understanding of how students interact with IBL and why it may or may not be effective.

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### The Use of Artificial Intelligence

The researcher used OpenAI's ChatGPT during the writing of this manuscript to support idea development, language refinement, proofreading, and interpreting some generated data from the SPSS software. ChatGPT was not used in any way to generate original research content; its primary role was to enhance clarity, improve language, and ensure grammatical accuracy.