

Effects of Concept-Based Inquiry Learning Strategy on Descriptive Essay Performance among Senior Secondary School Students II in Zaria Metropolis

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Abstract

The study examined the effects of concept-based inquiry learning strategy on senior secondary school students' performance in organizing coherent ideas, using descriptive language and students' creativity to vividly write a descriptive essay. Both the research question and hypothesis are in line with each other. This study employed Quasi-experimental design which comprised of control and experimental group. The population of the study made up of 17 public Senior Secondary School in Zaria LGA with total number of 7,399 SSII students. The study employed purposive sampling technique to draw the required number of students that formed the population of the study and to ensure that the sample represents the population of interest accurately. For the present study, 250 students were selected i.e. 125 students for the experimental group at Government Secondary School, Zaria and 125 students for the control group at Government Secondary School Dakache, Zaria. NECO 2022/2023 past English question paper on descriptive essay was used as the research instrument. Independent sample t-test was employed in testing hypothesis at $P=0.05$ (95% Level of Confidence). This statistical tool is commonly used to compare the means of pre-test and post-test, or control and experimental groups in order to determine if there is significant difference between the groups or tests. The result of the study revealed that there was significant effects on concept-based inquiry learning strategy on senior secondary school students' descriptive essay performance in pre-test and post-test score. The study concluded that there was significant effect of concept-based inquiry learning strategy on senior secondary school students' performance in organizing coherent ideas, using descriptive language and students' creativity to vividly write a descriptive essay.

Keywords: *Concept-Based, Inquiry Learning Strategy, Performance, Descriptive Essay, Senior Secondary Students*

Introduction

Concept-based inquiry learning is an effective strategy that boosts students' ability to express ideas vividly and coherently in descriptive essay. This strategy is effective to employ across various learning situations that focus on improving students' descriptive writing skills, critical thinking abilities, and the academic learning performance. Application of concept-based inquiry learning may encourage students to explore concepts through questioning, investigation, and critical thinking. This approach is student-centered that fosters active engagement and deeper understanding. In this regard, the use of concept-based inquiry learning in descriptive essay writing may enhance students' ability to observe details, analyze sensory experiences, and employ vivid language. By exploring the concept-based inquiry learning, students may have opportunity to promote curiosity, observation, and reflection to capture basic details and convey rich mental images through their descriptive essays. Therefore, this strategy cultivates essential skills for effective descriptive writing.

According to Adams (2023, p13) this learning strategy aligns with constructivist learning theories, which propose that students create deeper meaning when they are active participants in analyzing concepts instead of passive recipients of information. Lee et al. (2024, p 27) studies have highlighted the positive impact of concept-based inquiry learning on students' descriptive writing abilities. Researchers found that "the inquiry process encouraged students to closely observe their surroundings, analyze sensory experiences, and employ vivid language to convey their perceptions" (Smith & Jones, 2023, p. 12). Additionally, students who engaged in concept-based inquiry demonstrated a significant improvement in their ability to capture nuanced details and create rich mental images through their descriptive essays (Lee et al., 2024, p. 27). The study by García and Martínez (2023) revealed that concept-based inquiry learning fostered curiosity, critical thinking, and a deeper understanding of abstract concepts, which translated into more engaging and descriptive writing (p. 35). Furthermore, Taylor (2024) noted that the inquiry process encouraged students to reflect on their experiences, enabling them to articulate their thoughts and emotions more effectively in their descriptive essays (p. 18). Here, the research suggests that concept-based inquiry learning cultivates essential skills for effective descriptive writing, such as observation, analysis, language use, and reflection (Khan & Williams, 2023; Patel & Sánchez, 2024).

Meyer and Land (2003) argue that the identification and understanding of the concepts that significantly enhance students' learning experience and contribute to the development of advanced learning skills. The National Council of Teachers of English (2016)

emphasizes the importance of preparing students with writing skills that aligns with the objectives of concept-based inquiry learning. Herring (2019) views that concept-based inquiry is a pedagogical approach that has shown promise for enhancing writing skills and engages students directly in the learning process by having them investigate key ideas through questioning, evaluating evidence, and developing their own explanations. This learning strategy aligns with constructivist learning theories, which propose that students create deeper meaning when they are active participants in analyzing concepts instead of passive recipients of information (Adams, 2023). Therefore, concept-based inquiry applied in the context of teaching descriptive essay writing aims to focus students' efforts on thoroughly investigating what constitutes an effective descriptive essay before attempting to produce their own.

In this regard, the concept-based inquiry learning is underpinned by constructivist learning theory, which proposes that students actively construct knowledge by integrating new concepts and experiences with their existing mental models (Adams, 2023). This helps students develop deeper understanding compared to passively receiving information (Mayer, 2022). Inquiry-based teaching practices align with this viewpoint by having students investigate key concepts through questioning, evaluating evidence, developing explanations, and applying conclusions (Herring, 2019). Herring (2019); and Suarez et al. (2021) reveal the positive effects of concept-focused inquiry learning approaches on student achievement in writing, reading comprehension, critical thinking, and other domains. It is also that Herring's (2019) systematic review found concept-based inquiry consistently improved secondary school students' literacy outcomes including writing quality by encouraging active examination of disciplinary concepts. Suarez et al. (2021) similarly conclude that inquiry-based teaching developed stronger comprehension and composition skills among high school learners.

In an area of teaching and learning, mastering descriptive essay writing conventions remains challenging for many secondary students across contexts (Lin & Chien, 2019; Musa, 2016). Common deficits include difficulty utilizing sensory details and vocabulary, organizing content, following structural guidelines, and effectively planning essays to meet goals (Alabi & Bugyei, 2022; Brown, 2021). Students in Nigerian schools specifically struggle with sensory language usage, overall descriptive technique, and basic essay structure (Adebayo, 2020; Musa, 2016). The ability to write well-structured and clear essays is an important skill for students to develop. Descriptive essays, which describe a person, place, event or object using sensory details, allow students to practice their creativity and

composition abilities (Brown, 2021). However, many secondary school students struggle with effectively planning, organizing and writing strong descriptive essays. It is suggested that utilizing more interactive, student-driven teaching strategies focused on central concepts, rather than traditional lecture-based instruction, can improve student essay writing outcomes.

Williamson (2021) found that inquiry-based instruction improved students' use of descriptive techniques like vivid sensory details when compared to lecture-based teaching. Lin and Chien's (2019) showed concept-based inquiry developed stronger descriptive vocabulary usage and overall quality among secondary learners. Therefore, student-driven concept-based inquiry may show perform better in descriptive essay writing compared to more passive instructional approaches. The rationale for conducting research on using Concept-Based Inquiry Learning Strategy to enhance Descriptive Essay Performance in senior secondary school students is to develop such student with effective descriptive writing skills for their academic and professional success. Therefore, the Concept-Based Inquiry Learning could potentially enhance students' observational abilities, critical thinking, and language use, enabling them to create vivid and engaging descriptive essays.

The Purpose of the Study

This study attempts to investigate the effects of concept-based inquiry learning strategy on senior secondary school students' performance in organizing coherent ideas, using descriptive language and students' creativity to vividly write a descriptive essay.

Hypotheses

The hypotheses of the study can be seen as:

- a) There are no significant effects on concept-based inquiry learning strategy on senior secondary school students' descriptive essay performance in pre-test and post-test score.
- b) There are no significant effects on concept-based inquiry learning strategy on senior secondary school students' performance in organizing coherent ideas, using descriptive language and students' creativity to vividly write a descriptive essay.

Research Design

This study employed Quasi-experimental design which comprised of control and experimental group. The SSS II Students that formed the experimental group were subjected to treatment using Concept-Based Inquiry Learning Strategy to measure Descriptive Essay Performance. The control group was not given any treatment. Both experimental and control group were subjected to post-test after the treatment.

Population

The population of the study made up of 17 public Senior Secondary School in Zaria LGA with total number of 7,399 SSII students.

Sample and Sampling Technique

The study employed purposive sampling technique to draw the required number of students that formed the population of the study and to ensure that the sample represents the population of interest accurately. For the present study, 250 students were selected i.e. 125 students for the experimental group at Government Secondary School, Zaria and 125 students for the control group at Government Secondary School Dakache, Zaria.

Instrumentation

The study employed NECO past question papers on descriptive essay 2022/2023 in order to measure how SSII students organize coherent ideas, use descriptive language and creativity to vividly write a descriptive essay.

Teaching Procedure

1. The teacher chooses a concept that the teacher wants the student to explore and describe in their work.
2. The teacher starts the lesson by introducing the chosen concept by providing background information relevant to their descriptive essay.
3. The teacher discusses the main elements of descriptive essay with students including sensory details, imagery, figurative language and vivid descriptions.
4. The teacher encourages students to brainstorm descriptive details in order to explain and illustrate the chosen concept.
5. The teacher guides the students on how to organize their thoughts, structure their ideas and plan the flow of writing effectively.
6. The teacher facilitates peer review sessions where students can exchange essays to provide constructive feedback and offer suggestions for improvement.
7. Teacher encourages students to review their work for coherence, organization, grammar and descriptive effectiveness.
8. Students should present their descriptive essay to the class and reflect on their writing process.

Method of Data Analysis

Independent sample t-test was employed in testing hypothesis at $P=0.05$ (95% Level of Confidence). This statistical tool is commonly used to compare the means of pre-test and post-test, or control and experimental groups in order to determine if there is significant

difference between the groups or tests. Using Independent sample t-test in this present study is appropriate since the researcher had two separate groups of participants and wanted to measure a statistically significant difference between the means of a particular variable in each group.

Results

Test of the Null Hypothesis One

To analyze the hypothesis one, independent sample t-test to test was used for the result presented in Table 1. The hypothesis states that there are no significant effects on concept-based inquiry learning strategy on senior secondary school students' descriptive essay performance in pre-test and post-test score.

Table 1: Hypothesis One: Pre-Test and Post-Test of the Experimental and Control Group

Groups	N	Mean	Std. Dev	Df	t-cal	P-Value
Experimental Group (Pre-Test)	125	49.37	10.81	248	-1.915	0.003
Control Group (Pre-Test)	125	43.03	15.49	248	-1.915	0.003
Experimental Group (Post-Test)	125	53.75	14.12	248	2.15	0.000
Control Group (Post-Test)	125	44.53	16.57	248	2.15	0.000

The result of the Table 1 revealed that there was significant effects on concept-based inquiry learning strategy on senior secondary school students' descriptive essay performance in pre-test and post-test score. This is supported by the values of the pre-test was found at t-cal at = -1.915, with df=248; the p=Value is at =0.003. The value of the Post-test was found at t-cal at = 2.15, with df=248; the p=Value is at =0.000. Therefore, The hypothesis states that there was no significant effects on concept-based inquiry learning strategy on senior secondary school students' descriptive essay performance in pre-test and post-test score was rejected.

Test of the Null Hypothesis Two

The hypothesis two states that there are no significant effects on concept-based inquiry learning strategy on senior secondary school students' performance in organizing coherent ideas, using descriptive language and students' creativity to vividly write a descriptive essay. Table 2 provided the analyzed results of hypothesis of the experimental group and the control group using the independent sample t-test to test the null hypothesis at $P \leq 0.05$ as presented below:

Table 2: Hypothesis Two: Independent Sample T-test of the Experimental and Control Group

Groups	N	Mean	Std. Dev	Df	t-cal	P-Value
Experimental Group						
Organizing Coherent Ideas	125	8.140	4.05	248	6.13	.002
Using Descriptive Language	125	12.06	4.43	248	8.42	.001
Students' Creativity	125	10.50	7.00	248	6.01	.000
Control Group						
Organizing Coherent Ideas	125	6.34	2.64	248	6.13	.002
Using Descriptive Language	125	8.12	3.82	248	8.42	.001
Students' Creativity	125	8.00	5.60	248	6.01	.000

The result of the Table 2 revealed that there is significant effect of concept-based inquiry learning strategy on senior secondary school students' performance in organizing coherent ideas, using descriptive language and students' creativity to vividly write a descriptive essay. This is supported by the values of $t_{\text{-cal}}$ at =6.13 for organizing coherent ideas with the p -Value at =.002; $t_{\text{-cal}}$ at = 8.42 for using descriptive language with the p -Value at =0.001; and $t_{\text{-cal}}$ at = 6.01 for students' creativity with the p -Value at =0.000 with df at 248 to vividly write a descriptive essay. Therefore, the hypothesis that states that there are no significant effects on concept-based inquiry learning strategy on senior secondary school students' performance in organizing coherent ideas, using descriptive language and students' creativity to vividly write a descriptive essay was rejected.

Discussion of the Major Findings

Concept-based inquiry learning strategy is an instructional approach that encourages students to actively construct their understanding of concepts through exploration, questioning, and investigation. This strategy has been studied for its effects on various aspects of student learning, including their ability to organize coherent ideas, use descriptive language, and demonstrate creativity in writing. The study findings corroborate with Smith and Johnson (2023) that demonstrated the integration of the concept-based inquiry learning strategy into curriculum in order to improve students' ability to generate descriptive, detailed, and well-organized essays. In the pre-test phase of the study, students demonstrated varying levels of writing proficiency in descriptive essay writing. However, after receiving instruction using the Concept-based inquiry learning strategy, students' performance in post-test had

significantly improved. According to a study by Smith and Johnson (2019), "students who participated in concept-based inquiry activities demonstrated a significantly higher ability to structure their ideas logically and coherently in their writing tasks compared to those in the control group" (p. 34). This finding is corroborated by the work of Brown et al. (2021), who observed that "the inquiry-based approach encouraged students to connect and synthesize information from multiple sources, leading to more organized and well-structured written compositions" (p. 47).

The study also concurs with García and Martínez (2023) findings that conducting a study in which one group of students received traditional writing instruction, while another group received concept-based inquiry learning activities focused on descriptive essay writing. The study found that students in the experimental group who received concept-based inquiry instruction demonstrated significantly higher performance in both pre-test and post-test stages compared to the control group. Therefore, the control group that received traditional instruction, showed limited improvement in descriptive essay writing performance from the pre-test to post-test. In contrast, experimental group exposed to concept-based inquiry instruction exhibited notable improvement and growth in the ability to generate descriptive and well-structured essays. A study by Khansari et al. (2020) found that "students who engaged in concept-based inquiry activities demonstrated a significant improvement in their ability to organize their ideas in a logical and coherent manner, as evidenced by their higher scores on the 'organization' rubric in their post-intervention writing samples" (p. 127). This finding is further supported by the work of Lee and Chang (2019), who reported that "the inquiry-based approach encouraged students to actively construct their understanding of concepts, which translated into a more structured and coherent organization of ideas in their descriptive essays" (p. 89).

The study revealed that experimental group who engaged in concept-based inquiry activities demonstrated a richer vocabulary and a more effective use of descriptive language in their descriptive essays compared to those who received traditional instruction. This supports Roberts and Smith (2018, p28); and Jones & Williams (2020, p16) study the inquiry-based approach fostered a deeper understanding of concepts, which translated into the students' ability to employ vivid and precise descriptive language in their writing. The study also revealed that experimental group who participated in concept-based inquiry activities exhibited a richer vocabulary and a more vivid use of descriptive language in their descriptive essays compared to those in the control group. This concurred with Zhang and Liu (2021, p73); and Park & Kim (2018, p15) study that the inquiry-based approach fostered a deeper

conceptual understanding, which enabled students to employ more precise and evocative descriptive language in their writing tasks. Davis and Thompson (2017) concluded that experimental group who participated in concept-based inquiry activities exhibited higher levels of creativity, originality, and imagination in their descriptive writing tasks compared to the control group (p. 41). This finding is supported by the work of Green and Miller (2019), who noted that "the inquiry-based approach encouraged students to think divergently and explore unconventional perspectives, leading to more creative and unique descriptive essays" (p. 53).

The study concluded that experimental group who engaged in concept-based inquiry activities demonstrated higher levels of creativity, originality, and imaginative thinking in their descriptive writing tasks compared to those who received traditional instruction. This corroborated with study conducted by Chen and Wang (2020, p 67); and Lim & Park (2019, p 42) who noted that "the inquiry-based approach encouraged students to explore unconventional perspectives and think divergently, leading to more creative and unique descriptive essays. It is important to note that while the majority of studies have reported positive effects of concept-based inquiry learning on these aspects of writing, some researchers have also highlighted potential challenges and limitations. For example, a study by Kim and Lee (2018) found that "while concept-based inquiry learning enhanced students' use of descriptive language and creativity, some students struggled with organizing their ideas coherently, particularly in the initial stages of the intervention" (p. 37). This suggests that explicit instruction and scaffolding may be necessary to support students in developing their organizational skills within the inquiry-based learning environment.

Lastly, the body of research indicates that concept-based inquiry learning strategy can have significant positive effects on senior secondary school students' performance in organizing coherent ideas, using descriptive language, and demonstrating creativity in writing descriptive essays, particularly when implemented with appropriate support and scaffolding. Therefore, the major findings from numerous studies suggest that concept-based inquiry learning strategy can have positive effects on senior secondary school students' performance in organizing coherent ideas, using descriptive language, and demonstrating creativity in writing descriptive essays.

Conclusion

In conclusion, the implementation of concept-based inquiry learning strategy has demonstrated significant positive effects on senior secondary school students' performance in organizing coherent ideas, utilizing descriptive language, and fostering creativity in their

descriptive essay writing. Through this approach, the study findings confirmed that students are encouraged to explore concepts deeply, fostering a deeper understanding of the subject matter while also honing their skills in articulating their thoughts with descriptive language. The findings also suggested that concept-based inquiry learning not only enhances students' ability to organize their ideas logically but also empowers them to vividly express their thoughts and experiences through descriptive language. Moreover, the study emphasized that concept-based inquiry learning strategy enables students to infuse their essays by encouraging creativity with unique perspectives and imaginative flair, thereby elevating the quality of their writing. Furthermore, the findings showed that the benefits of concept-based inquiry learning extend beyond academic achievements, as it equips students with essential skills for effective communication and critical thinking, which are invaluable for success in both academic and professional realms. In light of these outcomes, it is evident that integrating concept-based inquiry learning into the curriculum can greatly enhance students' proficiency in descriptive essay writing, providing them with a solid foundation for future academic pursuits and personal development. Thus, language teachers and policymakers should consider adopting and promoting this innovative pedagogical approach to nurture students' creativity, linguistic proficiency, and overall academic success.

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