



**ENHANCING PARAGRAPH WRITING SKILLS THROUGH PICTURE SERIES TECHNIQUE:
EVIDENCE FROM JUNIOR SECONDARY SCHOOLS IN KADUNA STATE, NIGERIA**

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Abstract

The study investigated the effect of Picture Series Technique (PST) on the paragraph writing performance of junior secondary school students in Kaduna South Local Government Area, Kaduna State, Nigeria. The study was motivated by persistent challenges among students in the study area such as poor idea generation, weak organization, lack of coherence, and inadequate content development in paragraph writing. A quasi-experimental pre-test–post-test control group design was adopted. The population comprised 6,616 JSS II students, from which a sample of 125 students was purposively selected. The experimental group (68 students) was taught using PST, while the control group (57 students) received conventional instruction. Data were collected using a Paragraph Writing Achievement Test (PWAT), scored based on unity, coherence, completeness, use of linkers, and grammar/mechanics. Descriptive statistics (mean and standard deviation) and inferential statistics (independent samples t-test) were used for data analysis at a 0.05 level of significance. Findings revealed that students exposed to PST performed significantly better than those in the control group, with a higher mean gain (7.32 vs. 2.63). The technique also significantly improved key components of paragraph writing, particularly coherence and completeness, as well as students' ability to generate and organize ideas. The null hypotheses were rejected, confirming that PST has a statistically significant effect on paragraph writing performance and organization. The study concludes that picture series technique is an effective instructional strategy for improving students' paragraph writing skills. It recommends that English language teachers integrate PST into classroom instruction when teaching paragraph.

Introduction

Writing is a fundamental language skill that enables learners to communicate ideas effectively in academic contexts. At the junior secondary school level, paragraph writing serves as the foundation for more advanced composition skills. However, many students experience difficulty in idea generation, logical organization of ideas and thought as well as expressing them coherently in written form. These challenges are often attributed to non application of suitable and effective media instructions in teaching writing. The picture series technique, which involves the use of series of related images to guide learners in constructing meaningful narratives or descriptions, has been identified as an effective instructional material capable for improving writing skills. By presenting visual stimuli in logical order, the technique facilitates idea generation and supports coherence in paragraph development. It aligns with cognitive and multimedia learning principles, which emphasize the integration of visual and verbal information in knowledge construction. Therefore, the adoption of picture series technique could provide solution to the persistent challenges associated with paragraph writing among junior secondary school students.

Despite the importance of writing skills, many students at junior secondary schools in the area of study, demonstrate poor performance in paragraph writing. Some of the observed problems identified are: lack of sentence unity, weak organization of ideas, limited content development, and grammatical inaccuracies. In Kaduna South Local Government Area, these challenges are evident in students' written work and examination outcomes. Conventional teaching methods often fail to provide adequate scaffolding to eliminate this problem. Although language teaching technique such as picture series technique have shown promise in improving writing skills, their application in the context of Kaduna South remains limited and under-researched. This creates a

need to investigate the effectiveness of this technique in enhancing students' paragraph writing performance.

Objectives of the Study

The study aims to:

1. determine the effect of picture series technique on the paragraph writing performance of junior secondary school students in Kaduna South Local Government Area;
2. examine how picture series technique influences students' paragraph organization.

Research Questions

The study is guided by the following questions:

1. What is the effect of picture series technique on the paragraph writing performance of junior secondary school students?
2. How does picture series technique influence students' paragraph organization?

Research Hypotheses

1. There is no significant effect of picture series technique on the paragraph writing performance of junior secondary school students.
2. Picture series technique has no significant influence on students' paragraph organization.

Review of Related Literature

Picture series technique (hence force PST) has attracted the attention of language teachers and researchers. The technique was considered as a visual-based instructional strategy for improving learners' writing skills. It involves presenting learners with a series of related images that guide them in constructing meaning and organizing ideas into coherent written forms. According to

Wright (2010), pictures function as powerful stimuli which does not only motivate learners but also provides support for proper language production. Harmer (2015) asserts that visual teaching materials enhance learners' ability to generate ideas and structure discourse logically. Similarly, Tomlinson (2013) emphasizes that exposure to visual input facilitates meaningful language use by reducing cognitive overload and stimulating imagination.

Asrifan (2015) investigated the effect of picture series on the students' ability to write a narrative essay. He adopted quasi experimental research design. The experimental group was taught using picture series technique while the control group was taught the same topic using the traditional method of verbal instruction. The pre and post tests results of the study indicated that the students displayed better performance when they were taught through the use of PST compared to the control group. The integration of picture series in teaching narrative essay was recommended by the researcher. The study is relevant to the present because both use the same quasi experimental design. However, the study differs from the present study in its dependent variable.

Leaonardo et al (2022) found that using picture in a language teaching can improve students' motivations, interests and attitudes. It also found that pictures encourage students to express their ideas, opinions, and thinking based on their imagination. The researchers suggest that teachers should apply picture in teaching writing, thus learning objectives can be achieved, and students can get satisfactory results.

More recent empirical studies reinforce these theoretical positions. Wahyuni, Mantra, and Handayani (2020) found that students exposed PST demonstrated significant improvement in writing performance, particularly in content development of narrative essay. Mardiana, Nurpahmi, and Satriani (2023) also report that picture series enhances learners' ability to sequence events

logically, thereby improving coherence in written texts. In the same vein, Afdila et al. (2023) observe that picture-based instruction supports students in transforming visual representations into structured written expressions, leading to better engagement and clarity.

While these studies establish the effectiveness of picture series technique, a closer examination reveals that most of them focus on general writing performance. This broad focus tends to obscure the specific contribution of the technique to paragraph writing, which requires mastery of unity, coherence, progression of ideas and completeness. Furthermore, several studies rely heavily on classroom action research designs, which, although valuable for pedagogical improvement, limit the strength of causal claims. The present study, therefore, extends this body of work to concentrate specifically on paragraph writing performance and employing a more rigorous comparative approach within the context of junior secondary schools in Kaduna South local government area of Kaduna state.

Paragraph writing performance itself has been widely discussed as a component of writing competence. Oshima and Hogue (2014) define a paragraph as a group of related sentences that develop a single idea, emphasis unity and coherence as essential features. Zemach and Rumisek (2016) further highlight that paragraph writing involves clear topic sentences, supporting details, and connectors that ensure smooth flow of ideas. From a pedagogical perspective, Richards and Renandya (2012) argue that students' difficulties in writing often stem from their inability to generate and organize ideas rather than purely linguistic deficiencies.

Empirical evidence supports this claim. Fareed, Ashraf, and Bilal (2016) identify poor organization and lack of idea development as major challenges faced by secondary school students in writing

tasks. Similarly, Toba, Noor, and Sanu (2019) report that students struggle with coherence and cohesion, resulting in fragmented paragraphs. These findings suggest that instructional strategies should focus not only on grammar but also on cognitive processes such as idea generation and organization. Within this context, the role of picture series technique becomes particularly relevant. By providing visual cues, the technique facilitates idea generation, which is a very important first step in writing. According to Paivio's Dual Coding Theory (as applied in recent studies such as Wang, 2021), the combination of visual and verbal information enhances memory and idea retention and retrieval. Mayer's Cognitive Theory of Multimedia Learning (2014) similarly posits that learners understand and retain information better when it is presented through both visual and verbal channels.

While the literature provides substantial evidence on the general effectiveness of PST, there remains a need for more context-specific and focused investigations. The present study addresses this need by examining how PST influences paragraph writing performance, with particular emphasis on idea generation and paragraph organization, among junior secondary school students in Kaduna South Local Government Area.

Paragraph Writing Components and Pedagogical Implications

Paragraph writing is a foundational skill in second language writing, requiring the integration of multiple sub-skills that ensure clarity, logical flow, and completeness of ideas. Scholars have consistently identified core elements such as unity, coherence, completeness (adequate development), and the use of linkers (cohesive devices) as essential to effective paragraph construction.

Unity refers to the extent to which all sentences in a paragraph relate to a single controlling idea, usually expressed in the topic sentence. According to Oshima and Hogue (2014), a unified paragraph maintains focus by excluding irrelevant details and ensuring that each supporting sentence contributes directly to the main idea. Zemach and Rumisek (2016) further emphasize that lack of unity often results in disorganized writing, where ideas appear scattered and unrelated. Empirical observations by Toba, Noor, and Sanu (2019) show that many secondary school students struggle with maintaining unity, often introducing ideas that deviate from the central theme. While these studies clearly establish unity as a core requirement, they largely attribute students' weaknesses to insufficient practice and instructional support, with limited attention to how visual instructional strategies—such as picture series—can scaffold the maintenance of a single focus. The present study, therefore, examines whether structured visual prompts can help learners sustain unity by anchoring their writing around a clearly sequenced idea.

Coherence, closely related to unity, concerns the logical arrangement and smooth flow of ideas within a paragraph. Halliday and Hasan's (2014) theory of cohesion highlights that coherence is achieved through meaningful connections between sentences, often realized through cohesive devices such as reference, substitution, ellipsis, conjunctions, and lexical ties. Harmer (2015) also notes that coherence depends on the logical sequencing of ideas, which enables readers to follow the writer's line of thought effortlessly. Studies such as Fareed, Ashraf, and Bilal (2016) reveal that students frequently produce paragraphs with weak coherence due to poor organization and lack of transitional devices. Although these studies emphasize the importance of coherence, they tend to treat it as a purely linguistic issue rather than a cognitive one involving sequencing of ideas.

In contrast, the use of picture series may directly address this gap by providing a visual structure that guides logical progression, a dimension this study specifically investigates.

Completeness, often referred to as adequate development, involves providing sufficient supporting details to fully explain the controlling idea. Oshima and Hogue (2014) argue that a well-developed paragraph includes examples, explanations, and details that make the main idea clear and convincing. Richards and Renandya (2012) similarly stress that many learners produce underdeveloped paragraphs due to difficulty in generating supporting ideas. Empirical studies, including Toba et al. (2019), confirm that students often write very short paragraphs lacking elaboration. While prior research identifies this problem, it rarely explores instructional techniques that can systematically stimulate idea expansion. Picture series technique, by presenting multiple related scenes, has the potential to prompt learners to elaborate on each stage, thereby enhancing completeness.

Another important aspect of paragraph writing is the use of paragraph linkers or cohesive devices, which ensure smooth transitions between sentences. Halliday and Hasan (2014) classify these devices into conjunctions (e.g., *however*, *therefore*, *then*), reference words, and lexical cohesion. Zemach and Rumisek (2016) note that appropriate use of linkers improves readability and helps establish relationships between ideas. Hyland (2016) further argues that cohesive devices are essential for guiding readers through the text and signaling logical connections. Despite their importance, studies such as Fareed et al. (2016) indicate that students either underuse or misuse linkers, leading to abrupt and disconnected sentences. While previous research highlights these deficiencies, it often focuses on explicit teaching of connectors rather than integrating them with idea development strategies. Picture series technique may indirectly support the use of linkers by

encouraging chronological and logical sequencing (e.g., *first*, *next*, *finally*), yet this relationship has not been sufficiently examined in empirical literature.

In addition to unity, coherence, completeness, and linkers, scholars also identify organization and topic sentence development as integral to paragraph writing. A clear topic sentence provides direction, while logical ordering of supporting sentences ensures effective communication. Harmer (2015) and Hyland (2016) both stress that without proper organization, even grammatically correct sentences may fail to convey meaning effectively. However, many instructional approaches emphasize final written products rather than the processes that lead to organized writing. Visual techniques such as picture series offer a process-oriented alternative by guiding learners from idea generation to structured output.

Overall, the reviewed literature establishes that paragraph writing is a multidimensional skill involving several interrelated components. However, much of the existing research treats these components either in isolation or within general writing performance, without examining how specific instructional strategies can simultaneously enhance them. Moreover, there is limited context-specific evidence from Nigerian junior secondary schools. The present study addresses these gaps by investigating how picture series technique influences key aspects of paragraph writing—particularly unity, coherence, completeness, and the use of linkers—through its impact on idea generation and organization.

Research Design

This study adopted a quasi-experimental pre-test–post-test control group design. This design was considered appropriate because it allows for comparison between groups while operating within intact classroom settings where random assignment of students is not feasible. The design involved

two groups: an experimental group exposed to the picture series technique and a control group taught using the conventional method. Both groups were pre-tested and post-tested to determine the effect of the treatment on students' paragraph writing performance.

Population of the Study

The population of the study comprised all six thousand six hundred and sixteen (6,616) junior secondary school students (JSS II) in Kaduna South Local Government Area, Kaduna State. JSS II students were selected because they have been introduced to basic writing skills and are expected to develop paragraph writing competence at this stage. A sample of one hundred and twenty five (125) students was drawn using a purposive sampling technique. An intact class of sixty eight (68) students from GSS Kakuri was used as experimental group while another intact class from GSS Narayi with total number of fifty seven (57) students was used as control group. The primary instrument used for data collection was a Paragraph Writing Achievement Test (PWAT). The test required students to write a paragraph based on the given topics.

A scoring rubric was developed to assess students' performance in the five components of paragraph writing, these are:

- i. Unity
- ii. Coherence
- iii. Completeness (content development)
- iv. Use of linkers (cohesive devices)
- v. Grammar and mechanics

Each component was assigned a specific score, and the total score represented the student's overall paragraph writing performance. The instrument was subjected to face and content validity by experts in English language education and measurement and evaluation from Kaduna state university. Their suggestions were incorporated to improve the clarity and relevance of the test items and scoring criteria. To ensure its reliability, the instrument was pilot-tested on the students of GSS Turunku Igabi local government.

Procedure for Data Collection and Analysis

Both the experimental and control groups were given pre test to determine their baseline performance in paragraph writing. The result was collected and kept for further action. The experimental group was taught paragraph writing using the PST, where students were guided to generate and organize ideas based on series of pictures provided. The control group was taught using the conventional method, which involved teacher explanation and writing without visual aids. The treatment lasted for a period of eight weeks, with regular instructional sessions. After the treatment a post test was administered to both groups to determine their performance.

The Data collected were analyzed using inferential statistics. Mean and standard deviation were used to answer the research questions by describing students' performance. Independent samples t-test was used to test the hypotheses at a 0.05 level of significance, comparing the mean scores of the experimental and control groups.

Research Question 1

What is the effect of picture series technique on the paragraph writing performance of junior secondary school students?

Table 1: Mean and Standard Deviation of Students' Performance

Group	N	Pre-test Mean	Post-test Mean	Mean Gain	Std. Dev.
Experimental Group	68	8.40	15.72	7.32	2.12
Control Group	57	8.18	10.81	2.63	2.28

Both groups had comparable mean scores at the pre-test stage, indicating similar baseline ability. However, the experimental group recorded a substantial increase in post-test performance (Mean = 15.72) compared to the control group (Mean = 10.81). The higher mean gain (7.32) for the experimental group suggests that the picture series technique had a marked positive effect on students' paragraph writing performance.

Research Question 2

How does picture series technique influence students' idea generation and paragraph organization?

Table 2: Mean Scores on Paragraph Writing Components

Component	Experimental Mean	Control Mean
Unity	3.45	2.35
Coherence	3.60	2.50
Completeness	3.65	2.55
Linkers	3.25	2.15

Students in the experimental group performed better across all components of paragraph writing. The most significant improvements were observed in completeness and coherence. This indicates

the effect of PST in these two aspects. The improved use of linkers further suggests better connectivity of ideas within paragraphs.

Hypotheses Testing

1. There is no significant effect of picture series technique on paragraph writing performance.

Table 3: Independent Samples t-test

Group	N	Mean	Std. Dev.	t-value	p-value	Decision
Experimental Group	68	15.72	2.12			
Control Group	57	10.81	2.28	12.41	0.000	Rejected

The calculated p-value (0.000) is less than the 0.05 level of significance; therefore, the null hypothesis is rejected. This indicates that there is a statistically significant effect of picture series technique on students' paragraph writing performance.

2. Picture series technique has no significant influence on students' idea generation and paragraph organization.

Table 4: t-test on Component Scores

Variable	t-value	p-value	Decision
Idea Generation & Organization	10.18	0.000	Rejected

Since the p-value is less than 0.05, the null hypothesis is rejected. This implies that picture series technique significantly enhances students' idea generation and paragraph organization.

Summary of Findings

1. Students exposed to picture series technique performed significantly better than those taught using conventional methods.
2. The technique led to significant improvement in paragraph writing components, particularly coherence and completeness.
3. Picture series technique significantly enhances idea generation and organization, which are very essential for effective paragraph writing.

Discussion of Findings

The findings of this study reveal that the use of picture series technique had a significant positive effect on students' paragraph writing performance. The experimental group, which was exposed to PST, outperformed the control group in general writing scores and specific components of paragraph writing. This indicates that integrating PST into writing instruction can enhance students' ability to construct meaningful and well-organized paragraphs.

The significant improvement observed in the paragraph writing performance of the experimental group supports earlier findings that visual-based instructional strategies facilitate better learning outcomes in writing. This result is consistent with the position of Harmer (2015), who argues that visual materials stimulate learners' thinking and provide a concrete basis for language production. It also aligns with Tomlinson (2013), who emphasizes that meaningful exposure to visual input enhances learners' ability to generate ideas and express them effectively. Empirically, the finding corroborates studies such as Wahyuni, Mantra, and Handayani (2020) and Mardiana, Nurpahmi, and Satriani (2023), which reported significant improvement in students' writing performance

when taught using picture series. The implication is that the technique does not merely support writing mechanically but actively engages learners in the cognitive processes required for effective composition.

Furthermore, the findings demonstrate that picture series technique improves students' idea generation and paragraph organization, which are central to the second research question. The higher scores recorded by the experimental group in components such as coherence, completeness, and unity suggest that the technique effectively supports the structuring of ideas. This supports Richards and Renandya's (2012) assertion that students' writing difficulties often stem from challenges in organizing and developing ideas rather than from linguistic limitations alone. The result is also in line with Mayer's (2014) Cognitive Theory of Multimedia Learning, which posits that learners process information more effectively when it is presented through both visual and verbal channels. By providing sequential images, picture series technique reduces the cognitive burden associated with idea generation and enables students to focus on organizing their thoughts logically.

In addition, the improvement in the use of linkers among students in the experimental group suggests that picture series technique enhances coherence not only at the conceptual level but also at the linguistic level. This finding aligns with Halliday and Hasan's (2014) theory of cohesion, which emphasizes the role of cohesive devices in creating meaningful connections within a text. The sequential nature of picture series appears to naturally prompt the use of transitional expressions such as *first*, *next*, and *finally*, thereby improving the flow of ideas. This supports the findings of Sukserm and Wasanasomsithi (2023), who observed that visual-based instruction enhances students' ability to organize ideas and use cohesive devices effectively.

Another important implication of the findings is that picture series technique promotes completeness in paragraph development. Students in the experimental group were able to provide more detailed and elaborated responses, likely because each image in the series served as a prompt for additional information. This observation is consistent with Oshima and Hogue (2014), who emphasize that effective paragraphs require sufficient supporting details to fully develop the main idea. The technique, therefore, appears to function as a scaffold that guides students through the process of elaboration.

In summary, the discussion shows that picture series technique significantly enhances paragraph writing performance by improving students' ability to generate ideas, organize them logically, and express them coherently. The findings are consistent with both theoretical perspectives and empirical studies, while also addressing gaps in the literature by focusing on paragraph writing and providing evidence from a Nigerian educational context.

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