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INFLUENCE OF INSTRUCTIONAL MATERIALS ON STUDENTS' ACADEMIC PERFORMANCE IN PUBLIC SECONDARY SCHOOLS IN ANAMBRA STATE

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Abstract

The study examined the influence of instructional materials on students' academic performance in public secondary schools in Anambra State. Two research questions guided the study and two null hypotheses were tested at 0.05 level of significance. The study was a descriptive survey research design. The population of the study was 21,272 senior secondary school students in form 2 (SS2) in 267 public secondary schools in the six Education Zones in Anambra State. The sample of 1,068 SS2 students was used for the study. Multistage sampling techniques comprising proportionate stratified and simple random sampling technique was used for the study. Instructional Materials Rating Scale (IMRS) was used for data collection while Students' Academic Performance Scores (SAPS) was used to measure students' academic performance for this study. The instruments were subjected to face and construct validation. The data collected from the pilot testing were subjected to internal consistency reliability technique for the items in each cluster using Cronbach Alpha and the average coefficient values of 0.81 for IMRS was considered highly reliable and suitable for the study. Mean, standard deviation and paired sample t-test was used for data analysis. The study revealed that audio-visual and printed instructional materials positively and significantly influences students' academic performance in public secondary schools in Anambra State. The study concluded that the use of instructional materials is an important variable that influence students' academic performance in public secondary schools in Anambra State. Based on the findings, the study recommended that public secondary school teachers especially English Language teachers should use instructional materials in their lesson presentation as this will make their lesson clear, easy for students to assimilate and reduce boredom in the classroom.

Keywords: Instructional Materials, Students' Academic Performance

Introduction

Academic performance is the outcome of education. It plays a very important role in education. It is the extent to which students, teachers or institutions have achieved their educational goals. It

represents achievement outcomes that indicate the extent to which a person has accomplished specific goals. The goals to be accomplished is regarded in most school systems as cognitive goals that apply across multiple subject areas or that include the acquisition of knowledge and understanding in a specific intellectual domains. Therefore, academic performance is considered to be a multifaceted construct that comprises different domain of learning.

Academic performance is regarded as excellence in all academic disciplines, in class as well as in co-curricular activities. Itankan (2023) opined that the academic performance of a child is the learning outcomes of the child, which includes the knowledge, skills and ideas acquired and retained through their course of study within and outside the classroom situations. Evermeld and Andala (2023) perceived academic performance as students' ability in computation and problem solving, which can normally be measured by a written test. Evermeld and Andala further noted that academic performance include performance by students in both curricular and co-curricular activities. Nwana and Okeke (2024) averred that academic performance can be measured by the GPA (Grade Point Average) or by standardized assessment designed for selection purpose like secondary school certificate examination. This standardized assessment determines whether or not students will have the opportunity to continue their educational career. Besides the relevance of academic achievement to an individual, academic performance is of utmost importance for the wealth of a nation and its prosperity.

The issue of poor academic performance among learners in secondary schools has been recorded in Anambra State in the recent past. Nwagbata *et al.* (2021) revealed a decline in external examination performance of students in English Language and Mathematics in Anambra State. Similarly, Mbanugo *et al.* (2024) established that there is a high repetition rate in public secondary schools in Anambra State which is an indicator of poor academic performance among the students. This low percentage in academic performance is worrisome and could be linked to poor use of instructional materials in classroom. Nwagbata *et al.* further noted that high rate of students' failure in external examinations could be attributed to inadequate use of instructional materials in most schools and majority of the teachers did not take cognizance of the importance derived from the use of instructional materials while teaching. Those that adopted the utilization did not use them appropriately.

Instructional materials are essential in today's teaching and learning process. They are essential tools which enhance the assimilation, comprehension, application and retention of concepts in any subject. Instructional materials are used to make teaching and learning more meaningful and comprehensible to learners. Okeke (2023) defined instructional materials as those resources used to facilitate teaching and learning. Instructional resources are people, events, places or materials that are used to enhance learning, usually by simplifying a difficult situation or making uninteresting learning attractive. It is simply resources used for effective implementation of any educational programme. In the same vein Oladejo *et al*. (2021) described instructional resources

as human or non-human materials which a teacher uses to pass information to learners in the classroom. What qualifies resources to be tagged as instructional or educational is when they are used for communication and dissemination of information in the teaching and learning environment (Ogundeji *et al*., 2024). The demand for instructional materials' utilization in the teaching and learning of business studies is very important as it could enhance students' academic achievement, retention and application of skills.

Instructional materials are what are used by teachers to assist them in providing information for the attainment of required learning experience. They are used to provide the richest possible teaching and learning interaction between teachers and learners by promoting effective communication process. Okafor (2024) opined that instructional materials help to arouse and sustain interest and help to concretize ideas and stimulate the imaginations of the students. They also stated that the instructional resources should be usable and economical in terms of cost. Both teachers and students should have access to learning materials in order to improve not only teachers' job performance but also students' academic performances.

Instructional materials constitute alternative channels of communication, which a teacher can use to convey more vividly instructional information to learners. They represent a range of materials which can be used to extend the range of vicarious experience of learners in a teaching-learning situation. Okechukwu *et al.* (2024) acknowledged that instructional materials are such resources used by teachers to aid explanations and make learning of subject matter understandable to students during teaching and learning process. Okechukwu *et al.* further noted that instructional materials are visual and audio-visual aids, concrete or non-concrete, used by teachers to improve the quality of teaching and learning activities. They observed that instructional materials have been grouped according to the senses they appeal. Nwana and Okeke (2024) gave few examples of visual facilities to include maps, chart and pictures; audio facilities include radio, loudspeaker, audio-tape, talking books and toy telephone while example of audiovisuals includes television, desktop and laptop computers. Visual facilities appeals to the sense of sight, audio facilities appeals to the sense of hearing while audiovisuals appeals to the sense of sight and hearing.

Contextually, the researcher referred to instructional materials as those materials used by teachers to simplify their teaching. They are different teaching aids or apparatus, tools or equipment which teachers employ to facilitate learning, understanding and acquisition of skills. It is those things that a teacher or the learner uses in the course of teaching/learning to make learning simple, easy to understand, aid retention and recall whenever it is necessary. Instructional materials can be durable and non-durable materials, audio-visual materials, printed and non-printed materials, projected and non-projected materials, and mass media, print media and sound media. In this study, instructional materials will be delimited to audio-visual and printed instructional materials.

Audio-visual instructional materials refer to teaching and learning resources that combine both auditory and visual elements to enhance the learning experience. These materials are designed to engage learners by presenting information through multiple senses, which can facilitate better understanding, retention, and application of knowledge. Ogundeji *et al.* (2024) defined audio-visual instructional materials as teaching aids that combine both auditory and visual elements to enhance the learning experience. They held that the materials can include videos, slideshows, presentations, animations, and interactive multimedia content that engage learners through both sight and sound. Audio-visuals appeal to the auditory and visual senses of the learners and stimulate interest to learn. Such materials take the form of films, television, audio-visual tapes, CDs, VCDs, DVDs and other high-definition electronic devices. Nwana and Okeke (2024) asserted that audio-visual instructional materials are educational resources that utilize audio and visual components to deliver information or present concepts. These materials can include audio recordings, images, charts, graphs, diagrams, and other visual representations that complement spoken or written explanations to facilitate comprehension and retention.

Printed instructional materials are written articles presented in black and white ink. Printed instructional materials are primarily paper-based materials that reach intended audiences through written words or illustrations. Examples of print materials include fliers, pamphlets/ brochures, protective school book covers, fact sheets, posters, and cards. Okechukwu *et al.* (2024) noted that print materials consist of all written materials, excluding non-print resources, which convey planned course information. Okechukwu *et al.* give examples of printed resources to include, but are not limited to: textbooks, workbooks, reference books, magazines, newspaper, journals. Use of pictures, photos and graphics make print materials attractive to multiple audiences but print materials often rely on text to get complete information across, so they may only reach literate audiences. Nwana and Okeke (2024) opined that printed materials are all forms of publications, documents, or a note in the form of newspapers, magazines, pamphlets, books, photos, pictures, transcriptions of magnetic tapes, and various other forms of printed materials. This media can be found anywhere and anytime and we can reach it in the nearest shops at a relatively cheaper cost. In everyday life, print media is related to printing. Therefore, the print media tends to be called part of the mass media whose role is to gather various information, process, print, and disseminate it.

The study and mastery of English language is a major objective of Nigeria education. The achievement of this objective requires the concern of the government and school principals in collaboration with classroom teachers. There is a great need for proper provision and utilization of instructional materials in order to achieve the objective of the emphasis laid on the teaching and learning of English language at all levels of educational system. Despite the consensus on the importance placed on instructional materials in teaching English language, there is a glaring absence of these materials and poor utilization by classroom teachers. The implications of the

absence of these materials and their poor use on students might include poor performance in English language examination in some schools and poor grammar in written and spoken language as observable in students' daily conversation in some public secondary schools in Anambra State. Therefore, this study intends to find out how instructional materials influence students' academic performance in public secondary schools in Anambra State.

Purpose of the Study

The main purpose of the study was to examine the influence of instructional materials on students' academic performance in public secondary schools in Anambra State. Specifically, the study sought to determine the influence of:

1. Audio-visual instructional materials on students' academic performance in English language in public secondary schools in Anambra State.
2. Printed instructional materials on students' academic performance in English language in public secondary schools in Anambra State.

Research Questions

The following research questions guided the study:

1. What is the influence of audio-visual instructional materials on students' academic performance in English language in public secondary schools in Anambra State?
2. What is the influence of printed instructional materials on students' academic performance in English language in public secondary schools in Anambra State?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. Audio-visual instructional materials do not significantly influence students' academic performance in English language in public secondary schools in Anambra State.
2. Printed instructional materials do not significantly influence students' academic performance in English language in public secondary schools in Anambra State.

Research Methods

The study was carried out in Anambra State, Nigeria. The study adopted descriptive research design. The population of the study consist 21,272 SS2 in 267 public secondary schools in the six education zones in Anambra State. The sample of 1,064 SS2 students was used for the study. Multistage sampling techniques comprising proportionate stratified and simple random sampling

technique was used for the study. Instructional Materials Rating Scale (IMRS) was used for data collection while Students' Academic Performance Scores (SAPS) was used to measure students' academic performance for this study. The instrument (IMRS) was subjected to content and construct validation. The content validation was done using three experts, while construct validation was carried out by Principal Component Analysis (PCA) with the help SPSS v.26. The data collected from the pilot testing were subjected to internal consistency reliability technique for the items in each cluster using Cronbach Alpha and the average coefficient values of 0.81 for IMRS was considered highly reliable and suitable for the study. Out of 1,064 copies of the instrument administered, 908(85%) of the instrument were correctly completed and returned. Mean and standard deviation statistics was used to answer the research questions and paired sample t-test was used to test the null hypotheses at 0.05 level of significance.

Results

Research Question One: What is the influence of audio-visual instructional materials on students' academic performance in English language in public secondary schools in Anambra State?

Table 1: Mean ratings of students on the influence of audio-visual instructional materials on students' academic performance in English language in public secondary schools in Anambra State

S/n	**Item Statements**		**Mean**		
	My teacher make use of:	**N**	**($\bar{X}$)**	**SD**	**Remark**
1	opaque projector to demonstrate to students	908	3.4778	0.2182	**Agreed**
2	slides in presenting English language lesson	908	3.5869	0.1394	**Agreed**
3	film strips to summarize information	908	3.6495	0.1158	**Agreed**
4	overhead projector to demonstrate a lesson	908	3.4459	0.2713	**Agreed**
5	slide projectors to present charts and graphs	908	3.4121	0.3541	**Agreed**
6	video materials to illustrate how to learn word structure	908	3.7398	0.2053	**Agreed**
7	LCD panels to present a common image to students	908	3.6206	0.1129	**Agreed**
8	video materials to enable students to learn easier	908	3.5211	0.1833	**Agreed**
9	computer images to design learning experiences	908	3.4542	0.2528	**Agreed**
10	motion pictures in presenting their lesson in vocal practices	908	3.2807	0.3701	**Agreed**

Cluster Mean Rating ($\bar{X}$)	**3.5189**	**0.2223**	**Agreed**

Analysis in Table 1 above showed the mean ratings of students on the influence of audio-visual instructional materials on students' academic performance in English language in public secondary schools in Anambra State. The data revealed that all the items 1-10 on the audio-visual instructional materials are agreed by the students to positively influence their academic performance in English language in public secondary schools in Anambra State because the mean scores are above 2.50 which is the study mark off point for acceptance. In other words, the cluster mean score of 3.5189 also confirms that all the items of audio-visual instructional materials positively influence students' academic performance in English language in public secondary schools in Anambra State.

Research Question Two: What is the influence of printed instructional materials on students' academic performance in English language in public secondary schools in Anambra State?

Table 2: Mean ratings of students on the influence of printed instructional materials on students' academic performance in English language in public secondary schools in Anambra State

S/n	**Item Statements**		**Mean**		
	My teacher make use of:	**N**	**($\bar{X}$)**	**SD**	**Remark**
11	syllabus for day to day lesson plan preparations	908	3.5483	0.2557	**Agreed**
12	classroom register for students rolls in class	908	3.7116	0.1881	**Agreed**
13	educative wall charts pasted on the walls in the classrooms to promote learning in English Language subject	908	2.9412	0.6576	**Agreed**
14	dictionary during instructional delivery to find meaning of some concepts to guide students' learning	908	3.3927	0.3104	**Agreed**
15	graphics for picture representation in teaching various subjects are displayed to support teaching	908	3.5704	0.2326	**Agreed**
16	work books in English Language to give students assignment	908	3.6639	0.1782	**Agreed**
17	current textbooks to support their teaching in English Language	908	3.4702	0.3804	**Agreed**

18	cartoons to display evidence of the lesson taught in the classrooms	908	3.4815	0.2911	**Agreed**
19	pamphlets on past questions and answers available for English Language subject	908	3.2137	0.5443	**Agreed**
20	newspaper to teach students vocabulary	908	3.4304	0.3536	**Agreed**
	Cluster Mean Rating ($\bar{X}$)		**3.4424**	**0.3392**	**Agreed**

Analysis in Table 2 above showed the mean ratings of students on the influence of printed instructional materials on students' academic performance in English language in public secondary schools in Anambra State. The data revealed that all the items 11-20 on the printed instructional materials are agreed by the students to positively influence their academic performance in English language in public secondary schools in Anambra State because the mean scores are above 2.50 which is the study mark off point for acceptance. In other words, the cluster mean score of 3.4424 also confirms that all the items of printed instructional materials positively influence students' academic performance in English language in public secondary schools in Anambra State.

Test of Hypotheses

Hypothesis One

H_{01}: Audio-visual instructional materials do not significantly influence students' academic performance in English language in public secondary schools in Anambra State.

Table 3: Paired sample t-test on the significant influence of audio-visual instructional materials (AVIM) on students' academic performance (SAP) in English language in public secondary schools in Anambra State

Variables	N	Mean	Std. Dev.	df	t-value	Sig. (2-tailed)
AVIM - SAP	908	12.2892	1.0395	907	57.414	0.000

***Significant at $p < 0.05$*

Analysis in Table 3 showed the paired sample t-test of students on the significant influence of audio-visual instructional materials (AVIM) on students' academic performance (SAP) in English language in public secondary schools in Anambra State. The result showed that p-value of 0.000 is less than 0.05 level of significance which resulted in the decision to accept the alternative hypothesis. The result is also strengthened by the t-value that that t-calculated value of 57.414 is

greater than the critical value of ±1.96 at 5% (0.05) level of significance. Hence, the null hypothesis is rejected. Therefore, audio-visual instructional materials significantly influence students' academic performance in English language in public secondary schools in Anambra State.

Hypothesis Two

H_{02}: Printed instructional materials do not significantly influence students' academic performance in English language in public secondary schools in Anambra State.

Table 4: Paired sample t-test on the significant influence of printed instructional materials (PIM) on students' academic performance (SAP) in English language in public secondary schools in Anambra State

Variables	N	Mean	Std. Dev.	df	t-value	Sig. (2-tailed)
PIM - SAP	908	13.0539	1.3208	907	52.718	0.000

***Significant at $p < 0.05$*

Analysis in Table 4 showed the paired sample t-test of students on the significant influence of printed instructional materials (PIM) on students' academic performance (SAP) in English language in public secondary schools in Anambra State. The result showed that p-value of 0.000 is less than 0.05 level of significance which resulted in the decision to accept the alternative hypothesis. The result is also strengthened by the t-value that that t-calculated value of 52.718 is greater than the critical value of ±1.96 at 5% (0.05) level of significance. Hence, the null hypothesis is rejected. Therefore, printed instructional materials significantly influence students' academic performance in English language in public secondary schools in Anambra State

Discussion of the Findings

Findings on the influence of audio-visual instructional materials on students' academic performance in English language in public secondary schools in Anambra State revealed that audio-visual instructional materials positively and significantly influence students' academic performance in English language in public secondary schools in Anambra State. The finding is as a result of the fact that students agreed that their teachers make use of; opaque projector to demonstrate to students, slides in presenting English language lesson, film strips to summarize information, overhead projector to demonstrate a lesson, slide projectors to present charts and graphs, video materials to illustrate how to learn word structure, LCD panels to present a common image to students, video materials to enable students to learn easier, computer images to design learning experiences, and motion pictures in presenting their lesson in vocal practices in public secondary schools in Anambra State. The finding is in agreement with Inyang (2022) that increase in teachers' use of audio-visual materials lead to improvement in students' academic performance

in schools in Anambra State. In line with the above finding, Ozuluonye et al. (2023) findings revealed that teachers' use of audio-visual instructional materials has a significant effect on students' performance in schools. Similarly, Ogundeji *et al.* (2024) findings indicated that the use of audio-visual aid makes the subject matter easy to understand and explain and students learn quickly and facilitate the acquisition, retention and recall of lessons learned. In the words of Okechukwu *et al.* (2024), audio-visual aids help the teachers to control the classroom and overcome the physical difficulties. Furthermore, Ekaette-Nkok (2024) established that the use of audio-visual instructional materials in teaching literature is less time consuming and as a result, teachers have ample time to create enjoyable classroom activities and conduct an effective teaching and learning process.

Findings on the influence of printed instructional materials on students' academic performance in English language in public secondary schools in Anambra State revealed that printed instructional materials positively and significantly influence students' academic performance in English language in public secondary schools in Anambra State. The finding is as a result of the fact that students agreed that their teachers make use of; syllabus for day to day lesson plan preparations, classroom register for students rolls in class, educative wall charts pasted on the walls in the classrooms to promote learning in English Language subject, dictionary during instructional delivery to find meaning of some concepts to guide students' learning, graphics for picture representation in teaching various subjects are displayed to support teaching, work books in English Language to give students assignment, current textbooks to support their teaching in English Language, cartoons to display evidence of the lesson taught in the classrooms, pamphlets on past questions and answers available for English Language subject, and newspaper to teach students vocabulary in public secondary schools in Anambra State. The result of this finding was in consonant with the finding of Okenyi (2022) that printed instructional materials positively and effectively enhance teachers' teaching that lead to improved academic performance of students in schools. He affirmed that printed instructional materials are extremely portable, cost effective, readily available and comfortable to use for students' learning and teachers' teaching. Supporting the findings, Itankan (2023) revealed that print encourages focused reading, allowing students to fully immerse themselves in the content without digital distractions, supporting critical thinking which significantly contribute to effective teaching and learning in the schools. Ayoro *et al.* (2023) pointed out in their findings that printing materials or textbooks allows teachers to give their students access to vital and up-to-date information applicable to their current curriculum. Moreover, Mbanugo *et al.* (2024) affirmed that printed materials also offer students a chance to review and practice topics away from class without having to search online for resources. Furthermore, exchanging ideas through handouts or physical copies affords learners an extra layer of interactivity, which cannot be achieved just through digital media alone (Mbanugo *et al.*, 2024)). Similarly, Okechukwu *et al.* (2024) asserted that printed instructional materials bring life to learning by stimulating students to learn. The use of printed instructional materials in the

classroom has the potential to help the teacher explain new concepts clearly, resulting in better students' understanding of the concepts being taught. Supporting the present study findings, Nwana and Okeke (2024) reported that reading on a screen often results in reduced focus and a shorter attention span due to notifications, pop-ups, and multitasking. In contrast, print materials allow students to focus entirely on the content without digital distractions, leading to better comprehension and a more immersive experience.

Conclusion

Based on the findings, the study indicated that the use of instructional materials (audio, visual, audio-visual and printed instructional materials) positively and significantly influences students' academic performance in public secondary schools in Anambra State. However, the study concluded that the use of instructional materials is an important variable that influence students' academic performance in public secondary schools in Anambra State.

Educational Implications of the Findings

The findings of this study have far-reaching educational implications. The outcome indicated that instructional materials positively and significantly influenced students' academic performance in public secondary schools in Anambra State. The implication is that academic performance of students is enhanced when teachers use different types of instructional materials when teaching. This can also imply that for a student to acquire knowledge and retain it, the teacher has to make proper use of instructional materials (stimulus) to get their attention in order for the students to acquire the desired knowledge, retain it and perform excellently in their academics in schools. Since instructional materials provide the students with the ability to retain and achieve excellently in the subject, it is necessary that teachers are encouraged to use instructional materials in teaching and learning to give maximum output. As a result, instructional materials should be considered as a substitute to the conventional teaching. In line with the assertion, teachers should develop clear concepts with the help of various types of instructional materials in public secondary schools in Anambra State.

Recommendations

Based on the findings of the study, the following recommendations were made.

1. Public secondary school teachers especially English Language teachers should use instructional materials in their lesson presentation as this will make their lesson clear, easy for students to assimilate and reduce boredom in the classroom.
2. There is need for teachers to be resourceful in instructional materials selection and utilization. This is to reduce the cost of production and maintenance of instructional

materials, especially the improvised ones. Thus, regular training and re-training of teachers is hereby recommended.

3. Teachers should encourage active students' participation in class work by adopting instructional materials interactions.

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