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EFFECT OF FLIPPED MODEL CLASSROOM ON ACADEMIC PERFORMANCE OF STUDENTS IN ENGLISH LANGUAGE IN SECONDARY SCHOOLS IN ABIA STATE, SOUTH-EAST, NIGERIA

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ABSTRACT

The study investigated the effect of the flipped classroom model on the academic performance of secondary school students in English Language in Abia State, South-East Nigeria. Two research questions and two hypotheses guided the study. A quasi-experimental pretest–posttest control group design was adopted. The population comprised 14,623 Senior Secondary School II (SS II) students in public secondary schools in Abia State, while a sample of 96 students was selected using purposive sampling from two intact classes in one co-educational school. Data were collected using researcher-developed instruments: The English Language Performance Test (ELPT), Cognitive Ability Test (CAT), and Flipped Classroom Instructional Package in English (FCIPE). The instruments were validated by three experts from the Faculty of Education, Abia State University, Uturu, and reliability coefficients of 0.84 for the ELPT and 0.85 for the CAT were obtained using split-half and test–retest methods with Spearman–Brown correction. The experimental group was taught using the flipped classroom model, while the control group received instruction through the expository teaching method for six weeks. Mean and standard deviation were used to answer the research questions, while Analysis of Covariance (ANCOVA) was employed to test the hypotheses at the 0.05 level of significance. The findings revealed that students taught using the flipped classroom model achieved significantly higher academic performance than those taught using the expository method. The results also showed no significant difference in the academic performance of male and female students exposed to the flipped classroom approach. The study concluded that the flipped classroom model is an effective and inclusive instructional strategy for improving students' achievement in English Language. It was recommended that teachers adopt flipped learning strategies and that schools provide adequate ICT facilities and training to support effective implementation.

KEYWORDS: Flipped classroom, academic performance, English Language, secondary school students, ICT, expository method.

1. INTRODUCTION

Education plays a fundamental role in shaping individuals and societies, serving as a powerful instrument for personal development and national advancement. It is a deliberate and systematic process through which knowledge, values, attitudes, and skills are transmitted to learners to enable them function effectively in society (Ganiyatu& Murtala, 2023). Beyond the acquisition of academic knowledge, education contributes to learners' mental, social, emotional, and ethical development, preparing them for productive participation in economic, political, and social activities (Onyali&Akinfolarin, 2017). At the secondary school level, education is particularly crucial because it forms the foundation for career choices, higher education, and lifelong learning. Secondary education in Nigeria, which typically serves learners between the ages of 11 and 17, provides the transitional stage between primary and tertiary education and is regarded as the breeding ground for future professionals (Nanbak, 2020).

In contemporary society, the integration of Information and Communication Technology (ICT) into education has transformed teaching and learning processes. ICT tools provide opportunities for personalized learning, access to vast information resources, and innovative instructional approaches that respond to the demands of the digital age (Mikre, 2011). Schools increasingly employ digital tools to create, store, and disseminate knowledge, thereby enhancing both teacher effectiveness and student engagement. This technology has given rise to modern pedagogical models that extend learning beyond the traditional classroom environment, enabling students to interact with instructional content anytime and anywhere (Harshada & Vinay, 2019). However, while ICT offers

numerous benefits, its integration also presents challenges related to accessibility, teacher preparedness, and student adaptation to technology-mediated learning (Stein & Sim, 2020).

Technological innovations have significantly disrupted traditional teacher-centered instructional methods, leading to the emergence of student-centered pedagogies designed to enhance active learning and academic achievement. Among these innovations is the flipped classroom model, an instructional approach that reverses the conventional sequence of teaching by delivering instructional content outside the classroom, typically through digital media, and utilizing classroom time for interactive learning activities (Boevé et al., 2016). In this model, students engage with lesson materials at their own pace before class, while in-class sessions focus on discussion, problem-solving, collaboration, and application of knowledge. Bergmann and Sams (2014) note that the flipped classroom promotes learner autonomy, increases teacher–student interaction, and transforms the teacher's role from a knowledge transmitter to a facilitator of learning.

The flipped classroom model is grounded in constructivist principles that emphasize active participation, self-directed learning, and collaborative knowledge construction. By allowing students to access lecture materials repeatedly and at their convenience, the approach democratizes learning and accommodates diverse learning styles (Pinnelli& Fiorucci, 2015). Furthermore, interactive classroom activities foster critical thinking, communication skills, and a deeper understanding of subject matter. This approach has been proposed as a solution to the limitations of the expository teaching method, which often positions the teacher as the central authority and students as passive recipients of information (Maheshwari, 2013). Although expository instruction can present information efficiently, it may not adequately promote higher-order thinking or sustained engagement, particularly in subjects that require language proficiency and communicative competence.

Language is the primary medium through which education is delivered, making proficiency in language essential for academic success. In Nigeria, English language occupies a unique position as the official language and the language of instruction at all levels of formal education (Mishina & Iskandar, 2019). It is also a core subject required for admission into tertiary institutions, making students' performance in English language a critical determinant of their educational progression. English language learning involves not only knowledge of grammar and vocabulary but also the development of listening, speaking, reading, and writing skills necessary for effective communication (Njoku, 2017). Despite its importance, students' academic performance in English language in many Nigerian secondary schools remains a concern, often attributed to factors such as teaching methods, cognitive ability, motivation, and socio-cultural influences.

Academic performance refers to the extent to which students achieve intended educational outcomes, typically measured through examination scores, grades, and other assessment indicators (York, Gibson, & Rankin, 2015). It is influenced by a complex interplay of cognitive, psychological, and environmental factors, including students' intellectual abilities, learning strategies, motivation, and classroom experiences. Research has also highlighted the potential influence of gender on academic outcomes, given socio-cultural expectations and differences in learning patterns between male and female students (Adigun et al., 2015). Consequently, identifying effective instructional strategies capable of improving students' academic performance in English language remains a priority for educators and policymakers.

Recent empirical studies have explored the effectiveness of the flipped classroom model in enhancing students' learning outcomes. Alsancak-Sirakaya and Özdemir (2018) found that the flipped model significantly improved students' academic achievement, motivation, and retention compared with traditional methods. Similarly, van Vliet, Winnips, and Brouwer (2015) reported that flipped instruction enhanced students' cognitive engagement and learning strategies, including critical thinking and peer collaboration. In the Nigerian context, Ikwuka and Okoye (2021) observed that both male and female students benefited academically from flipped classroom instruction, suggesting that gender differences may not significantly moderate its effectiveness. Etukakpan and Maduka (2022) also reported improved academic performance and retention among secondary school students taught using a flipped hybrid model, regardless of school location.

Despite growing evidence supporting the effectiveness of flipped classroom instruction, most existing studies have focused on subjects such as science, methodology, or higher education contexts, with limited attention to English language learning at the secondary school level in Abia State. Given the central role of English language in students' academic progression and national development, investigating innovative instructional strategies that can enhance performance in this subject is imperative. This study, therefore, examines the effect of the flipped classroom model on the academic performance of secondary school students in English language in Abia State, South-East Nigeria.

2. STATEMENT OF THE PROBLEM

Teaching in many Nigerian secondary schools is still largely dominated by teacher-centred methods in which students passively receive information during lessons. Such approaches often fail to promote active participation, critical thinking, and meaningful language use, which are essential for effective learning of the English Language. As a result, many students experience difficulties in comprehension, writing, and communication skills.In Abia State, South-East Nigeria, students' academic performance in English Language remains a major concern despite its status as a core subject and a prerequisite for higher education. Low engagement, limited individualized support, and inadequate opportunities for collaborative learning have contributed to poor outcomes in public examinations such as WAEC and NECO.

The flipped classroom model, which involves students learning instructional content before class and engaging in interactive activities during class, has been identified as a potential strategy for improving learning outcomes. However, there is limited empirical evidence on its effectiveness in enhancing English Language performance among secondary school students in Abia State.This study, therefore, investigates the effect of the flipped classroom model on the academic performance of Senior Secondary School II students in English Language in Abia State, South-East Nigeria.

Research Questions

The following research questions guided the study;

1. What is the difference in academic performance of secondary school II students taught English language using flipped model classroom and those taught using other teaching method?
2. What is the difference in academic performance of male and female secondary school II students taught English language using flipped classroom model?

Research Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance.

Ho_1 There is no significant difference in academic performance of secondaryschoolII students taught English language using flipped model classroom andthose taught using expository teaching method.

Ho_3 There is no significant difference in academic performance of male andfemale secondaryschool II students taught English language using flippedclassroom model.

3. METHODOLOGY

This section presents the methodology employed in conducting the study.

The study adopted a quasi-experimental pretest–posttest control group design to determine the effect of the flipped classroom model on students' academic performance in English Language. This design was considered appropriate because it enabled the researchers to compare the performance of students exposed to the flipped classroom approach with those taught using the conventional expository method without full randomisation of subjects. Two intact classes were used: one served as the experimental group and received instruction through the flipped classroom model, while the other served as the control group and was taught using the traditional expository method. Both groups were pretested before the intervention and post-tested after the treatment. The independent variable was the flipped classroom model, while the dependent variable was students' academic performance in English Language. Cognitive ability and gender were treated as moderating variables.The study was conducted in Abia State, located in the South-East geopolitical zone of Nigeria. The state comprises urban and rural communities and operates a structured secondary school system across seventeen local government areas. Abia State was selected due to persistent concerns about students' performance in English Language, which is a core subject and the medium of instruction at the secondary school level.The population of the study consisted of 14,623 Senior Secondary School II (SS II) students enrolled in public secondary schools in Abia State during the 2022/2023 academic session. SS II students were considered suitable because they have sufficient exposure to the English Language curriculum and are preparing for external examinations.A purposive sampling technique was used to select one co-educational secondary school that met specific criteria, including the availability of qualified English Language teachers and adequate ICT facilities. Two intact SS II classes from the selected school were used for the study, yielding a sample size of 96 students (51 males and 45 females). One class was assigned as the experimental group (44 students) and the other as the control group (52 students).Data were collected using researcher-developed instruments: the English language Performance Test (ELPT), the Cognitive Ability Test (CAT), and the Flipped Classroom Instructional Package in English (FCIPE). The ELPT comprised 50 multiple-choice items covering selected English Language topics such as nouns, pronouns, verb forms, active and passive voice, and stress patterns. It served as both the pretest and posttest (with items rearranged for the posttest). The CAT consisted of 20 multiple-choice items used to classify students into levels of cognitive ability before treatment. The FCIPE, developed using the ICTA indigenous communicative teaching approach instructional

design model, provided structured pre-class materials and in-class activities and post-class activities for the experimental group over six weeks.The instruments were validated by three experts, two in Curriculum and Instruction and one in Measurement and Evaluation, from the Faculty of Education, Abia State University, Uturu. Their reviews ensured clarity, relevance, and adequate coverage of the content areas. Reliability was established through pilot testing on students outside the study sample. Using split-half and test–retest procedures with Spearman–Brown correction, reliability coefficients of 0.84 for the ELPT and 0.85 for the CAT were obtained, indicating that the instruments were sufficiently reliable for the study.The experiment was conducted in three phases: pre-treatment, treatment, and post-treatment. During the pre-treatment phase, the ELPT and CAT were administered to both groups. The treatment phase lasted six weeks, during which the experimental group received instruction through the flipped classroom model, while the control group was taught using the expository method during normal school periods. In the post-treatment phase, the reshuffled ELPT was administered as a posttest to measure students' academic performance. In order to control the extraneous variables the reseachers taught the lessons (in-class), used the same scheme of work, same environment, same time duration, same assignment for the experimental class during their pre-class activities. However, the two groups had the same pretest, and post-test items. This also helped to address the Hawthorne effect.

Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS). Mean and standard deviation were used to answer the research questions, while Analysis of Covariance (ANCOVA) was employed to test the hypotheses at the 0.05 level of significance, with pretest scores serving as covariates to control for initial group differences.

Results

The result is presented based on the research questions.

Research Question One: What is the difference in academic performance between secondary school II students taught the English language using a flipped model classroom and those taught using an expository teaching method?

The result is presented in Table 4.1;

Table 1: Mean and Standard Deviation of Pre and Post-Test Performance between Flipped Model Classroom and Expository Teaching Methods

		Pretest		Post-test			
Groups	**N**	**$\bar{x}$**	**SD**	**$\bar{x}$**	**SD**	**Mean Gain**	**Mean Diff**
Experimental Group	44	52.64	8.581	68.73	11.224	16.09	8.9
Control Group	52	45.50	7.429	52.69	11.953	7.19	
Total	96						

Information in Table 1 shows the mean and standard deviation of the difference in academic performance between secondary school students II taught the English language using a flipped model classroom and those taught using the expository teaching method. The table indicates the means of 52.64 and 68.73 for the experimental group, with respective standard deviations of 8.581 and 11.224. the table further shows the pretest and post-test mean scores of 45.50 and 52.69 for the control group, with respective standard deviations of 7.429 and 11.953. With a mean gain of 16.09 for the experimental group and 7.19 for the control group and a mean difference of 8.9 in favour of the experimental group. This shows that there was improvement in the post-test scores of the two groups, but the experimental group was higher. Indicating that the use of the flipped model classroom improves the performance of students more than in the expository method.

Research Question Two: What is the difference in academic performance of male and female secondary school II students taught the English language using flipped classroom model?

The result is presented in Table 2.

Table 2: **Mean and Standard Deviation of Male and Female Students taught the English Language using a Flipped Classroom Model**

			Pretest		Post-test			
Group	**Gender**	**N**	**$\bar{x}$**	**SD**	**$\bar{x}$**	**SD**	**Mean gain**	**Mean Diff.**
Experimental (Flipped Classroom)	Male	24	51.33	9.774	67.67	11.672	16.34	0.54
	Female	20	54.20	6.802	70.00	10.819	15.8	

The result of the analysis in Table 2 shows the means of 51.33 and 67.67 with respective standard deviations of 9.774 and 11.672for the male students in the experimental group and means of 54.20 and 70.00 with their respective standard deviations of 6.802 and 10.819 for the female students taught English language using the flipped model classroom and mean gain of 16.34 for male and 1.80 for female with mean difference of 0.54 difference in favour of the male students. This is an indication that both categories performed well, with slightly better performance for males than females.

Hypothesis One

There is no significant difference in academic performance of secondary school II students taught the English language using flipped model classroom and those taught using expository teaching method.

The result is presented in Table 3.

Table 3: Summary of Analysis of Covariance (ANCOVA) of Academic Performance of Students English Language using the Flipped Model Classroom and Expository Teaching Method

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	10575.514[a]	2	5287.757	59.562	.000
Intercept	819.494	1	819.494	9.231	.003
Pretest	4447.484	1	4447.484	50.097	.000
Groups	1934.475	1	1934.475	21.790	.000
Error	8256.320	93	88.778		
Total	364912.000	96			
Corrected Total	18831.833	95			

a. R Squared = .562 (Adjusted R Squared = .552)

Table 3 shows the summary of the analysis of covariance (ANCOVA) which assumed that there is no significant difference in academic performance of secondary school II students taught the English language using flipped model classroom and those taught using expository teaching method. The result shows f-value of 21.790 and p-value of 0.000 at 0.05 significance level. Since the p-value is less than 0.05 ($p < 0.05$), the hypothesis was rejected and an alternate is therefore established thus; There is a significant difference in academic performance of secondary school II students taught the English language using flipped model classroom and those taught using expository teaching method.

Hypothesis Two

There is no significant difference in academic performance of male and female secondary school II students taught the English language using flipped classroom model.

The result is presented in Table 4.

Table 4: Summary of ANCOVA of Male and Female Students taught English Language using Flipped Model Classroom

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	3494.050[a]	2	1747.025	37.254	.000
Intercept	184.374	1	184.374	3.932	.054
Pretest	3434.656	1	3434.656	73.242	.000
Gender	5.129	1	5.129	.109	.743
Error	1922.677	41	46.895		
Total	213248.000	44			
Corrected Total	5416.727	43			

a. R Squared = .645 (Adjusted R Squared = .628)

Table 4 shows the summary of the analysis of covariance (ANCOVA) which assumes that there is no significant difference in academic performance of male and female secondary school II students taught English language using the flipped classroom model. The result shows an f-value of .109 and a p-value of 0.743 at a 0.05 level of significance. Since the p-value is greater than 0.05 ($p > 0.05$), the hypothesis was accepted. Therefore, there is no significant difference in academic performance of male and female secondary school II students taught the English language using the flipped classroom model.

4. DISCUSSION OF FINDINGS

The findings from research question one revealed that secondary school II students taught English Language using the flipped classroom model performed better academically than those taught using the expository teaching method. The experimental group recorded a higher mean gain score than the control group, indicating that the flipped classroom approach enhanced students' learning outcomes more effectively than the conventional method. The test of hypothesis one was rejected, showing that there is a significant difference in academic performance between students taught using the flipped classroom model and those taught using the expository method. This implies that the flipped classroom model has a substantial positive effect on students' academic performance in English Language. The finding may be attributed to the active learning opportunities, increased engagement, and individualized pacing provided by the flipped approach, which enable students to interact more deeply with instructional content before and during class.

This finding is consistent with the study of Alsancak-Sirakaya and Özdemir (2018), who reported that students exposed to the flipped classroom model achieved significantly higher academic performance and motivation than those taught through traditional methods. Similarly, van Vliet, Winnips, and Brouwer (2015) found that flipped instruction enhanced students' cognitive engagement, critical thinking, and learning strategies. In the Nigerian context, Etukakpan and Maduka (2022) also reported improved academic achievement among secondary school students taught using a flipped hybrid model. These studies corroborate the present finding by demonstrating that student-centred instructional approaches such as flipped learning promote deeper understanding and improved academic outcomes compared with teacher-centred methods.

The finding from research question two indicated that both male and female students taught English Language using the flipped classroom model showed substantial improvement in academic performance, with males performing slightly higher than females. However, the test of hypothesis four revealed that this difference was not statistically significant, indicating that gender does not significantly influence students' achievement when taught using the flipped classroom approach. This suggests that the flipped classroom model provides equitable learning opportunities for both male and female students, enabling them to benefit similarly from the instructional strategy.This finding aligns with the study by Ikwuka and Okoye (2021), who found that both male and female students improved academically when exposed to flipped-classroom instruction, with no significant gender difference in achievement. The result also aligns with the view that technology-supported and student-centred learning environments can reduce traditional gender disparities by allowing learners to progress at their own pace and participate actively in collaborative tasks. The implication is that the flipped classroom model can serve as an inclusive instructional strategy that enhances English Language learning outcomes, irrespective of gender.

5. CONCLUSION

Based on the findings of this study, it can be concluded that the flipped classroom model has a significant positive effect on the academic performance of secondary school students in English Language in Abia State. The study established that students taught using the flipped classroom approach achieved higher performance than those taught using the conventional expository teaching method. This indicates that the flipped model enhances students' engagement, understanding, and application of English Language concepts by allowing them to access instructional content prior to class and participate in interactive learning activities during class time.

The study further revealed that both male and female students benefited from the flipped classroom model, with no significant difference in their academic performance. This suggests that the effectiveness of the flipped approach is not dependent on gender and that it provides equitable learning opportunities for all students. Consequently, the flipped classroom model can be considered an inclusive teaching strategy capable of improving English Language achievement among diverse groups of learners.

Recommendations

1. English Language teachers should adopt the flipped classroom model as an alternative to traditional lecture-based methods to enhance students' engagement, participation, and academic performance.
2. Schools and educational authorities should provide adequate ICT facilities, training, and technical support to enable both male and female teachers effectively implement flipped learning strategies in the classroom.

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