# EFFECT OF FLIPPED CLASSROOM INSTRUCTIONAL STRATEGY ON ACADEMIC ACHIEVEMENT OF BUSINESS EDUCATION STUDENTS IN FINANCIAL ACCOUNTING IN OYO STATE TERTIARY INSTITUTIONS

**[1]Adebayo, K. M. and [2]Alagbe, L.A.**

Corresponding Author- adebayokazeem966@gmail.com 08034815324

alagbe.lukman2672@fcesoyo.edu.ng 08143909257

**[1,2]Department of Business Education, Federal College of Education (Special), Oyo**

## Abstract

*This study investigated the effect of a flipped classroom instructional strategy on the academic achievement of Business Education students in Financial Accounting in Oyo State tertiary institutions. A quasi-experimental pre-test-post-test non-equivalent control group design was adopted. The sample comprised 187 NCE II and Year II university Business Education students selected from two tertiary institutions in Oyo State, with 95 students in the experimental group taught using flipped classroom strategy and 92 in the control group taught using conventional lecture method. The Financial Accounting Achievement Test (FAAT), a 40-item multiple-choice instrument with a reliability coefficient of 0.78 established using Kuder-Richardson 20 formula, was used for data collection. Analysis of Covariance and t-test were employed to test the hypotheses at 0.05 level of significance. The results revealed a statistically significant difference in academic achievement between the two groups ($F(1,184) = 42.367$, $p = .000$, $\eta^2 = .187$), with the flipped classroom group outperforming the conventional group. However, no significant difference was found between male and female students' achievement in the flipped classroom group ($t(93) = 0.584$, $p = .561$). It was concluded that the flipped classroom instructional strategy is more effective in enhancing academic achievement in Financial Accounting and is gender-friendly. The study recommends the integration of flipped classroom strategy into the pedagogical training of Business Education lecturers and its adoption in the curriculum of tertiary institutions in Nigeria.*

**Keywords**: Flipped Classroom, Conventional Teaching, Academic Achievement, Gender, Financial Accounting, Business Education, Oyo State

## Introduction

The persistent challenge of poor academic performance in Financial Accounting among Nigerian students, particularly at the tertiary level, has remained a subject of significant concern for educators, policymakers, and industry stakeholders. Financial Accounting, as a core vocational subject in Business Education, is designed to equip students with practical skills and analytical knowledge required for the world of work. However, academic achievement of students in this subject, especially in institutions tasked with producing future business educators and professionals, has been consistently below average (Talatu & Buba, 2025). This trend not only threatens the quality of future teachers and accountants but also has a downstream effect on national educational and economic development goals. A critical factor implicated in this underachievement is the predominant reliance on conventional, teacher-centered instructional methods. The conventional teaching strategy, often characterized by lecture and direct instruction, positions the teacher as the sole repository of knowledge and the students as passive recipients. Scholars argue that while this method may be efficient for covering large amounts of content, it fails to foster the critical thinking, problem-solving, and active engagement necessary for deep conceptual understanding in a practical subject like Financial Accounting. Furthermore, the increasing use of social media and digital platforms by students in tertiary institutions is posing additional challenges to the effectiveness of traditional lecture methods, as students become socially diversified and spend more time on social media at the expense of individual learning (Kadiri, 2024).

In response to the limitations of conventional methods, contemporary educational discourse strongly advocates for student-centered, active-learning strategies that incorporate technology into the teaching-learning process. Among these, the flipped classroom instructional strategy has gained considerable traction globally. Rooted in constructivist and cognitive developmental theories, the flipped classroom is defined as a pedagogical approach where direct instruction moves from the group learning space to the individual learning space, resulting in a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter. In practice, students are exposed to instructional content, often via pre-recorded video lectures before class, while class time is dedicated to active problem-solving, discussions, and collaborative activities (Mistry, 2025).

The theoretical underpinnings of the flipped classroom are robust. Jean Piaget's

Cognitive Developmental Theory posits that individuals construct knowledge through experiences and interactions with their environment, progressing through stages of intellectual development. The flipped classroom operationalizes this by allowing students to engage with new content at their own pace outside class, then apply and test that knowledge through active learning activities during class. Vygotsky's social constructivism emphasizes that learning is a social process where interaction with peers and instructors is crucial for cognitive development. The flipped classroom embodies this by transforming class time into a collaborative space where students learn through discussion, peer teaching, and guided problem-solving. Multimedia Learning Theory further supports the flipped approach, suggesting that learners engage with two primary channels for information processing which are auditory and visual, and that integrating new information with existing knowledge through multiple sensory modes enhances learning retention and recall (Mistry, 2025).

Empirical evidence from various disciplines supports the efficacy of flipped classroom instruction. Studies have shown that flipped classroom approaches significantly improve students' academic achievement and engagement. In accounting education specifically, emerging research suggests that student-active methods enhanced by technology can improve engagement and performance. Talatu & Buba (2025) investigated the effect of flipped classroom method on academic performance of Business Education students in Financial Accounting in Nigerian universities and found that students taught with flipped classroom method had significantly higher mean achievement scores than those taught with conventional lecture method. Similarly, Anyigor-Ogah (2025) examined video-based flipped classroom technique for word processing and its effects on gender performance of business education students in universities, finding significant improvement in achievement with no gender disparity.

Kadiri (2024) examined the use of flipped classroom instructional strategy for improving students' academic achievement in Colleges of Education, revealing a significant difference between the mean achievement scores of students taught Economics using flipped classroom instruction and those taught using conventional lecture methods. The study also found that ability level had a significant effect on academic achievement, while gender did not. In Oyo State specifically, Makinde, Adelakun, Olorundare & Bolaji (2025) investigated the effect of flipped classroom strategy on undergraduate chemistry students' engagement and found high engagement levels among students exposed to the strategy, with top-rated indicators including self-paced learning, valuing subject matter, and seeking additional information. The issue of gender in academic achievement has remained a recurring decimal in educational research. Studies have reported conflicting findings regarding gender differences in achievement when exposed to innovative teaching strategies. Some researchers have found significant differences in favour of male students, others in favour of females, while

some have found no significant differences. Polat, Hopcan, Albayrak & Yildiz Durak (2025) examined the effect of feedback type and gender on computing achievements, engagement, flipped learning readiness, and autonomous learning in online flipped classroom, finding that gender did not significantly moderate the effectiveness of the flipped classroom approach. Anyigor-Ogah (2025) similarly reported no significant gender differences in achievement among business education students exposed to video-based flipped classroom instruction. These findings suggest that flipped classroom strategy may be gender-friendly, but further investigation in the context of Financial Accounting in Oyo State is warranted.

International studies have corroborated the positive findings on flipped classroom effectiveness. Rodríguez Rincón, Magreñán Ruiz, Orcos Palma et al. (2025) researched flipped classroom methodology for Mathematics in Economics and Business students and demonstrated that those who actively engaged with flipped classroom methodology showed significant improvements in academic performance, particularly among those with weaker mathematical backgrounds. Bhatta (2025) investigated students' performance and perceptions of flipped classroom approach in business mathematics and found significant improvements in achievement and positive student perceptions. Hwang (2025) examined the impacts of backgrounds on students' self-regulated learning in a flipped classroom setting, revealing that the flipped approach supports diverse learners in developing self-regulation skills. Onodipe, Romanow, and Robbins (2025) explored flipped classrooms and reflective writing, finding that the combination enhanced student success and deep learning.

However, despite this growing body of evidence, there remains a paucity of focused empirical research investigating the specific impact of flipped classroom instructional strategy on Financial Accounting achievement among Business Education students in Oyo State tertiary institutions. Oyo State houses several tertiary institutions, including universities and colleges of education that train future business educators and accounting professionals. Most existing studies either focus on other subjects, other active-learning strategies, or are situated in other geopolitical zones of Nigeria. Studies specifically on flipped classroom in Oyo State have focused on science education rather than Business Education (Makinde et al., 2025). Furthermore, the question of whether gender moderates the effect of flipped classroom instruction in Financial Accounting remains underexplored in this context. This gap necessitates a focused inquiry to provide empirical data that can inform pedagogical practice in these institutions.

Therefore, this study seeks to contribute to filling this gap by rigorously examining the effect of a flipped classroom instructional strategy compared to the conventional strategy on the academic achievement of Business Education students in Financial Accounting in Oyo State tertiary institutions, and determining

whether gender influences achievement among students exposed to the flipped classroom strategy.

## Statement of the Problem

The academic achievement of Business Education students in Financial Accounting in tertiary institutions across Nigeria, and specifically in Oyo State, has been a source of persistent concern. Recent academic sessions have recorded alarmingly high failure rates in accounting principles courses, with studies indicating persistent underachievement that threatens the pipeline of qualified business teachers and accounting professionals (Talatu & Buba, 2025). This chronic underperformance undermines the goals of vocational education and economic development.

While multiple factors contribute to this issue, including resource limitations and student attitudes, a significant body of criticism points to the prevalent, didactic teaching methodology. The conventional "chalk and talk" approach fails to engage students actively, does not connect abstract accounting principles to real-world contexts, and discourages the development of critical analytical skills. Moreover, the contemporary student population in tertiary institutions is increasingly digitally oriented, spending substantial time on social media and digital platforms. This reality presents both a challenge and an opportunity: the challenge of competing for student attention, and the opportunity to harness these digital tools for pedagogical purposes (Kadiri, 2024). The flipped classroom instructional strategy offers a promising alternative by integrating internet-based means of communication into the teaching-learning process, meeting students in their digital space while maintaining pedagogical rigor. However, despite its theoretical promise and empirical support from other disciplines and regions, there is a lack of empirical evidence on its effectiveness for Financial Accounting instruction specifically in Oyo State tertiary institutions. Additionally, the role of gender in determining the effectiveness of this strategy remains unclear, though recent studies suggest it may be gender-friendly (Anyigor-Ogah, 2025; Polat et al., 2025). Consequently, there is an urgent need to explore and validate this student-centered, technology-integrated pedagogical alternative and examine its differential effects by gender to reverse the trend of poor academic achievement.

## Research Questions

The study sought to answer the following questions:

1. What is the effect of a flipped classroom instructional strategy on the academic achievement of Business Education students in Financial Accounting in Oyo State tertiary institutions?
2. What is the difference in the academic achievement of male and female Business Education students taught Financial Accounting using the flipped classroom instructional strategy?

**Research Hypotheses**

The study was guided by the following null hypotheses tested at 0.05 level of significance:

$HO_1$: There is no significant difference between the academic achievement of students taught Financial Accounting using a flipped classroom instructional strategy and those taught using a conventional teaching strategy.

$HO_2$: There is no significant difference between the academic achievement of male and female students taught Financial Accounting using the flipped classroom instructional strategy.

**Methodology**

A quasi-experimental pretest-posttest non-equivalent control group design was employed. This design was appropriate as intact classes were used, preventing random assignment of individual subjects while allowing for comparison between groups. The population comprised all NCE II Business Education students offering Financial Accounting in public Colleges of Education in Oyo State and Year II Business Education students offering Financial Accounting in public universities in Oyo State. A multi-stage sampling technique was used. Purposive sampling was employed to select one university and one college of education based on accreditation status, availability of ICT facilities, and accessibility. Intact classes of NCE II and Year II Business Education students in these institutions were used, yielding a sample of 187 students: 95 in the experimental group (flipped classroom) and 92 in the control group (conventional lecture method). The experimental group comprised 52 males and 43 females, while the control group had 48 males and 44 females.

The instrument for data collection was the Financial Accounting Achievement Test (FAAT), a 40-item multiple-choice objective test covering three topics: Introduction to Partnership Accounts, Partnership Profit Sharing and Appropriation, and Admission of a New Partner. The FAAT was subjected to face and content validation by three experts in Business Education and Measurement and Evaluation. A pilot test conducted with 45 students outside the study area yielded a reliability coefficient of 0.78 using Kuder-Richardson 20 formula, indicating high internal consistency.

For the experimental group, a flipped classroom instructional package was developed, including pre-recorded video lectures uploaded to a dedicated WhatsApp platform and Google Classroom, PowerPoint slides with audio narration, practice quizzes, and collaborative problem-solving tasks for face-to-face sessions. The control group was taught the same topics using conventional lecture and demonstration method. The study was conducted over eight weeks: week one for training of research assistants and pretest administration, weeks two to seven for treatment, and week eight for posttest administration. Data collected were analyzed using Analysis of Covariance (ANCOVA) for hypothesis one and

independent samples t-test for hypothesis two at 0.05 level of significance.

**Results**

**Hypothesis One:** There is no significant difference between the academic achievement of students taught Financial Accounting using a flipped classroom instructional strategy and those taught using a conventional teaching strategy.

**Table 1: ANCOVA summary of Posttest Achievement Scores by Teaching Strategy**

| Source | SS | df | MS | F | p | $\eta^2$ |
|---|---|---|---|---|---|---|
| Corrected Model | 5123.784 | 2 | 2561.892 | 78.643 | .000 | .460 |
| Intercept | 8947.356 | 1 | 8947.356 | 274.681 | .000 | .599 |
| Pretest | 2845.671 | 1 | 2845.671 | 87.364 | .000 | .322 |
| Teaching Strategy | 1380.245 | 1 | 1380.245 | 42.367 | .000 | .187 |
| Error | 5993.216 | 184 | 32.572 | | | |
| Total | 161234.000 | 187 | | | | |

Table 1 shows a statistically significant main effect of teaching strategy on posttest achievement scores after controlling for pretest ($F(1,184) = 42.367$, $p = .000$, $\eta^2 = .187$). The null hypothesis was therefore rejected. The flipped classroom group had a higher adjusted mean score (31.67) compared to the conventional group (24.79), indicating that the flipped classroom strategy significantly enhanced student achievement.

**Hypothesis Two:** There is no significant difference between the academic achievement of male and female students taught Financial Accounting using the flipped classroom instructional strategy.

**Table 2: t-test Analysis of Posttest Achievement Scores by Gender in Flipped Classroom Group**

| Gender | N | Mean | SD | Df | t | p | Remark |
|---|---|---|---|---|---|---|---|
| Male | 52 | 31.62 | 5.18 | 93 | 0.584 | .561 | Not Significant |
| Female | 43 | 32.11 | 5.32 | | | | |

Table 2 reveals that male students had a mean score of 31.62 while female students had a mean score of 32.11. The calculated t-value of 0.584 was not significant at p = .561. Therefore, the null hypothesis was not rejected. This indicates that there was no significant difference between the academic achievement of male and female students taught Financial Accounting using the flipped classroom instructional strategy.

**Discussion**

The finding that the flipped classroom instructional strategy significantly enhanced students' academic achievement in Financial Accounting compared to the conventional method aligns with theoretical expectations and empirical evidence. This result supports constructivist theorists like Piaget and Vygotsky, who posited that knowledge is actively constructed through experience and social interaction rather than passively received. The flipped classroom approach, by shifting content delivery to pre-class individual learning and transforming face-to-face time into active problem-solving, facilitated deeper cognitive processing and meaningful understanding of Partnership Accounting concepts. Students engaged with video content at their own pace, revisited difficult concepts, and came to class prepared to apply their knowledge.

The findings corroborate Multimedia Learning Theory, which emphasizes that learning is enhanced when information is processed through both auditory and visual channels. The pre-recorded video lectures provided bi-sensory stimuli, allowing students to see accounting equations and journal entries while simultaneously hearing explanations. This dual coding contributed to better encoding and retrieval of information, explaining the superior performance of the flipped classroom group (Mistry, 2025).

These results are consistent with finding of Talatu & Buba (2025) who found that flipped classroom method significantly enhanced academic performance of Business Education students in Financial Accounting in Nigerian universities. Anyigor-Ogah (2025) reported significant improvement in achievement among business education students exposed to video-based flipped classroom instruction for word processing. Kadiri (2024) demonstrated the effectiveness of flipped classroom instruction for improving academic achievement among Colleges of Education students in Economics. In Oyo State, Makinde et al. (2025) reported high engagement levels among chemistry students exposed to flipped classroom strategy, supporting the present findings in the Business Education context. The finding of no significant gender difference in achievement among students exposed to the flipped classroom strategy is equally important. This result indicates that the flipped classroom is gender-friendly, benefiting male and female students equally. This finding aligns with Polat et al. (2025) who examined the effect of feedback type and gender in online flipped classroom and found that gender did not significantly moderate the effectiveness of the approach. Anyigor-Ogah (2025) similarly reported no significant gender differences in achievement among business education students exposed to video-based flipped classroom instruction. Kadiri (2024) also found no significant gender effect in flipped classroom instruction for Economics students. The absence of gender disparity suggests that the flipped classroom's emphasis on self-paced learning, collaborative activities, and multiple modes of content presentation may accommodate diverse learning styles irrespective of gender. This is particularly significant in the Nigerian context where gender equity in education remains a policy priority. The implication is that lecturers can adopt the flipped classroom strategy with confidence that it will not be a disadvantage to either male or female students.

## Conclusion

This study concludes that the flipped classroom instructional strategy is significantly more effective than the conventional lecture method for teaching Financial Accounting to Business Education students Oyo State tertiary institution. By shifting content delivery to pre-class individual learning through video lectures and utilizing face-to-face time for active, collaborative problem-solving, this strategy enhances academic achievement. Furthermore, the flipped classroom strategy is gender-friendly, as it benefits male and female students equally. The implication is that a shift from teacher-centered to learner-centered, technology-integrated pedagogies in tertiary institutions is necessary to improve learning outcomes in vocational subjects like Financial Accounting.

## Recommendations

Based on the findings of this study, the following recommendations were made:

1. Financial Accounting lecturers in tertiary institutions should be trained to adopt flipped classroom instructional

strategies through workshops and continuous professional development programmes, with emphasis on developing quality pre-recorded video content and facilitating active learning.

2. Curriculum bodies such as the National Universities Commission and National Commission for Colleges of Education should integrate flipped classroom activities into the Financial Accounting curriculum and teaching methodology syllabi.
3. Tertiary institution administrators should provide necessary instructional resources including reliable internet connectivity, learning management systems, and ICT facilities to support flipped learning approaches.

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