



Effect of Mobile Learning Instructional Resources on Business Education Students' Academic Achievement in Financial Accounting in Universities in Anambra State

Okonkwo, C.M., Ovute, A.O. & Eluwa, I.O.

Department of Science Education, Michael Okpara University of Agriculture, Umudike, Abia State

Corresponding Author: cm.okonkwo@coou.edu.ng

Abstract

This study determined the effect of teaching financial accounting with Mobile learning instructional resources on Business Education students' academic achievement in financial accounting in universities in Anambra State. Three research questions and three hypotheses guided the study which adopted pretest posttest non-equivalent group quasi-experimental design. The sample size comprised 65 year-one business education students from two intact classes drawn using purposive sampling technique. The instrument for data collection was Financial Accounting Achievement Test (FAAT). The reliability of the instrument was determined using Kuder Richardson (KR 21) formula which yielded a coefficient of 0.71. Mean score and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. The findings of the study revealed that Mobile learning instructional resources had a significant effect on students' achievement in financial accounting than the conventional classroom approach. The results also show that gender did not have a significant difference on students' academic achievement. It was recommended that professional institutions regulating the practice of accounting, should insist that lecturers of financial accounting use mobile learning instructional resources as it improves students' academic achievement in the course.

Keywords: Mobile learning instructional resources, academic achievement, financial accounting, google classroom, zoom classroom.

Introduction

Business Education is a form of vocational education focused on preparing individuals for the world of work through skills and knowledge in areas like office occupations, accounting, marketing, and entrepreneurship. Ezeani and Ogundola (2016) stated that business education is a course that offers knowledge and competences needed for entry into business occupations of all kinds and prospering in them. Ajua (2020) explained that business education plays a significant role in the economic development of a country by providing knowledge and skills to the learners which enables them to impart knowledge to others, handle sophisticated office technologies and information system aimed at producing competent, dynamic and skillful business teachers, office administrators, businessmen and women that can comfortably compete in the workplace. In Nigeria, Business Education is offered at both the secondary

and tertiary levels of education. Due to the robust nature of the programme, some tertiary institutions divide the programme of study into specialized options like accountancy, commerce and cooperatives/ marketing, management and secretarial studies.

Financial accounting is relevant to Nigeria's national development by providing crucial information for sound economic policy-making, effective management of public finances, and fostering accountability. It enables governments, businesses, and citizens to assess the nation's financial position and performance, facilitating informed decision-making, strategic planning, and the allocation of resources towards critical areas like infrastructure and human capital. Agbata, Okaro and Onyeogubalu (2022) upheld that Financial Accounting through all its various transformations

serves as a train that moves sustainable development. However, the approach adopted in teaching financial accounting could be a factor to be considered in measuring how students understand the course.

Financial accounting is being taught with a conventional classroom approach where the teacher physically stands before the students and gives out the learning materials, using a variety of teaching methods, and assesses the students through homework and class activities. According to Orji and Idoghor (2022) conventional classroom is more about teacher-centered, where the teacher lectures directly to the students, while they passively listen to the teacher. In face-to-face learning, students are evaluated exclusively by the teacher, who represents the main source of information, and the quality of learning is strongly dependent on the teacher alone. As a result, the conventional classroom approach may not be student-centered as students' participation may be restricted to only what the teacher permits in class. In order to bridge the gap created by the conventional approach, mobile learning instructional resources was introduced.

Mobile learning (m-learning) instructional resources refers to the use of mobile devices containing digital documents to deliver educational content and support learning activities, leveraging features like anytime, anywhere. Itedjere (2025) Mobile learning also facilitates collaborative learning which has been shown to enhance students understanding and academic success. Platforms that allow students to interact with their peers outside of the classroom encourage collaboration, discussion, and the sharing of ideas .M-Learning provides educational resources that are useful both in the classroom and outside the classroom. Learners can share these educational resources instantaneously among themselves without losing the contents. learning (Orhani, 2023). Mobile learning instructional resources is a constructivism instructional approach. On these backgrounds it becomes imperative to assess how the learning of Financial accounting through mobile learning instructional resources such as google classroom and zoom classroom can have effect on academic achievement and retention of students in the course. Google Classroom is an online learning management system developed by Google that aims to streamline the process of creating, distributing, and grading assignments in a digital classroom setting (Smart & Olutunu ,2023). While zoom classroom is a tool that provides instructors and

students a way to meet online synchronously via a personal PC/laptop or cell phone with or without using video (Ogbuefi & Ile 2024).

In the conventional classroom approach, the class teacher provides the lesson materials to students in class and gives them take home assignments while in mobile learning instructional resources like google classroom and zoom classroom, the resources are provided online for the students via a virtual learning environment, and the class time is used for class works and exercises. So, students are expected to go through the lesson materials at home on their own and at their pace, then the exercises and activities are done during the class time. This could encourage students "participation as they are able to go through the lesson materials on their own However, the extent to which the use of Mobile learning resources on students' academic achievement may transform and improve students achievement in financial accounting.

Academic achievement refers to the successful attainment of educational goals, measured through assessments like exams and teacher ratings, influenced by factors such as self-efficacy, motivation, school leadership, and learning environment. Ekpenyong, (2018) explained that academic achievement is an important parameter in measuring success in students. Observations and reports have shown that success or high academic achievement has become a herculean task to accomplish by students. Academic achievement is often times measured through examinations and or continuous assessments (Obadiaru, 2020).

Gender has sound psychological background and is used to refer to specific cultural patterns of behavior that are attributed to human sex. Gender role is a set expectations that prescribes how females or males should think, act or feel. Akunya, Oleabhie & Ede (2022) explained that in our society, males are assigned to such attributes as bold, aggressive, tactful and so on while females are assigned the opposite attributes such as fearful, timid, gentle and so on. In most societies, gender role has relegated females to the sidelines, preventing them from participating in and benefiting from educational and development efforts(Ogbuanya & Owodunni ,2015).

Proper using of mobile learning instructional resources in teaching of financial accounting, will help business education students to improve their academic achievement. However, business education students appear to be performing poorly in financial accounting

course. Despite efforts of teachers to make classroom instruction interactive, the poor student performance in accounting education has become a source of concern in many tertiary institutions across Nigeria (Onutu 2025). The problem of students' poor performance in financial accounting at the tertiary institution level may be as a result of instructional resources and learning environment, among other factors. This 21st Century is characterized by technological innovations that are applicable in education. One of such innovation is m-learning. Therefore, if m-learning is applied in its blended form to the teaching of financial accounting, what effect would it have on the business education students' academic achievement?

The study was guided by the following research questions and hypothesis

1. What are the mean achievement scores of students' taught financial accounting using Google classroom, zoom classroom and conventional classroom approach?
2. What are the mean achievement scores of male and female students' taught Financial accounting using google classroom instructional resources?
3. What are the mean achievement scores of male students and female taught Financial accounting using zoom classroom instructional resources?

The following hypotheses were also tested at 0.05 level of significance in line with the research questions

1. There is no significant difference in the mean achievement scores of students' taught financial accounting using google classroom, zoom classroom and conventional classroom approach.
2. There is no significant difference between the mean achievement scores of male and female students' taught financial accounting using google classroom instructional.
3. There is no significant difference between the mean achievement scores of male and female students taught Financial Accounting using Zoom classroom instructional resources

Method

The design of study was quasi-experimental design specifically; a pretest-posttest non-equivalent control group design. The study was carried out in

Anambra state of Nigeria. The study area was used because it has universities with facilities that could facilitate the conduct of the study in the area. And also the students has iPad and laptops that could be used for zoom classrooms. The population for this study comprised of 281 first-year business education students in universities in Anambra State. The sample for this study was made of 65 year one business education students in three universities offering business education in Anambra State. The sample size was made up of 21 business education (accountancy) students in the experimental group1, (11 males and 10 females), 23 business education (accountancy) students in the experimental group 2 (12 males and 11 females) and 21 business education (accountancy) students in the control group (12 males and 9 females). Purposive sampling technique was used as intact classes were chosen for the study. The instrument that was used for the collection of data was an achievement test titled, Financial Accounting Achievement Test (FAAT). The instrument is made up of 50 multiple choice questions (with options A to E), which was standardized using item analysis. The instrument was validated by two experts in the field of business education and one expert in the field of measurement and evaluation. Kuder Richardson (K-21) formula was used to determine the reliability of the instrument which yielded a coefficient of 0.71.

The experimental procedure included installing google classroom and zoom classroom Software, briefing the research assistants, training the research assistant for the experimental groups, sensitization of the participants and administration of the pre-test. The google classroom and zoom classroom instructional resources was applied for the experimental groups as the teacher provided learning materials for the students before the class via the learning management system. The class time was used for solving problems and other class activities. Extraneous variables like experimental mortality, experimental expectancy, and experimental bias were controlled by ensuring that standardization of procedure was followed. The research assistants were the actual lecturers of the course and the students have been taught by these lecturers before. The research questions were answered using mean and standard deviation. The hypotheses were tested with Analysis of Covariance (ANOVA) 0.05 level of significance.

Result

Table 4.1: Mean achievement scores and standard deviation of students' taught financial accounting using google classroom, zoom classroom and conventional classroom approach.

Group	N	Pretest		Posttest		Mean Difference	
		Mean	SD	Mean	SD		
Experimental (Google classroom)	23	37.04	3.268	43.00	3.247	5.96	
Experimental (Zoom classroom)	21	36.90	3.097	41.81	2.909	4.91	
Control (Conventional classroom)	21	34.67	2.477	36.62	2.636	1.95	

Result in Table 1 shows that the mean differences of 5.96, 4.91 and 1.95 for the experimental and control groups respectively shows that google classroom and

zoom classroom instructional resources had positive effect on students' achievement in financial accounting.

Table 2 Analysis of Covariance on the mean achievement scores of financial accounting student taught using Google classroom, zoom classroom and conventional classroom approach.

Source	Type III sum Of square	Df	Mean Square	F	Sig	Decision
Corrected model	648.888a	3	216.296	34.078	.000	Reject Ho
Intercept	190.186	1	190.186	29.964	.000	
Pre-test	153.017	1	153.017	24.108	.000	
Group	276.422	2	138.211	21.775	.000	
Error	387.174	61	6.347			
Total	107936.000	65				
Corrected total	1036.000	64				

a. R Squared =.626 (Adjusted R Squared=.608)

Table 2 shows that F value of 21.78 and the P-Value was .000. Since the p-value is less than the level of significance (P-Value <0.05>), the F-Value 21.78. Thus, the null hypothesis is rejected as there is a

statistically significant difference in the effect of the independent variable (Approach) on the dependent variable (achievement scores).

Table 3: Pairwise comparison result showing the significant mean difference in achievement scores between google classroom, zoom classroom and conventional classroom approach.

Dependent variables:		Pairwise Comparisons		95% Confidence Interval		
Posttest						
(I)group		mean Difference(J)	Std. Error	Sig.	Lower Bound	Upper bound
Google classroom	zoom classroom	.139	.898	.987	-2.02	2.30
Google classroom	conventional classroom	2.377*	.898	.028	4.53	
Zoom classroom	Conventional classroom	2.238*	.919	.046	.03	4.44

Table 3: shows that the mean difference between achievement scores of google classroom and zoom classroom has p-value of .987, google classroom and conventional classroom has p-value of .028, zoom classroom and conventional has p-value of .046, which is not statistically significant. The

hypothesis will not be rejected as the P-value is greater than the level of Significance (P-value> 0.05), and that means that the achievement scores of students taught financial accounting with mobile learning instructional resources do not significantly differ from those taught with conventional classroom approach.

Research Question Two:

What are the mean achievement scores of male and female students' taught Financial accounting using google classroom instructional resources?

Table 4: Mean achievement scores and Standard Deviation of male and female Student's taught financial accounting using google classroom instructional resources

Gender	N	Pre-test		Post-test	
		Mean	SD	Mean	SD
Males	12	38.17	2.980	44.17	3.433
Female	11	35.82	3.250	41.73	2.611

Table 4 revealed that in pre-test, the mean score of male is 38.17 with standard deviation 2.98 while that of the female is 35.82 with standard deviation 3.25. In posttest the mean score of male is 44.17 with standard deviation 3.43 while that of

female is 41.73 with standard deviation 2.61 indicating that male outperformed the female counterpart after being exposed to google classroom instructional resources.

Table 5 Analysis of Covariance between the mean achievement scores of male and female students taught financial accounting using google classroom instructional resources

Source	Type III Sum of Square	Df	Mean Square	F	Sig.	Decision
Corrected model	90.594 ^a	2	45.297	6.407	.007	
Intercept	81.209	1	81.209	11.486	.003	
Pretest	56.443	1	56.443	7.983	.010	Accept Ho
Gender	7.174	1	7.174	1.015	.326	
Error	141.406	20	7.070			
Total	42759.000	23				
Corrected total	232.000	22				

a. R Squared =.390 (Adjusted R Squared =.330)

Table 5 shows that F value of 1.02 and the P-value was .326 which is not statistically significant. The hypothesis will not be rejected as the P-value is greater than the level of Significance (P-value > 0.05). Thus

the null hypothesis which states that there is no significant difference in the mean achievement score of male and female students when exposed to google classroom is therefore accepted.

Research Question Three:

What are the mean achievement scores of male students and female taught financial accounting using zoom classroom instructional resources?

Table 6: Mean achievement scores and Standard Deviation of male and female Student's taught financial accounting using zoom classroom instructional resources.

Gender	N	Pre-test		Post-test	
		Mean	SD	Mean	SD
Males	12	36.75	3.361	41.08	3.088
Female	9	37.11	2.892	42.78	2.489

Table 6 revealed that in pre-test, the mean score of male is 36.75 with standard deviation 3.36 while that of the female is 37.11 with standard deviation 2.89. In posttest the mean score of male is 41.08 with standard deviation 3.08 while that of

female is 42.78 with standard deviation 2.48 indicating that female outperformed the male counterpart after being exposed to zoom classroom instructional resources.

Table 7: Analysis of Covariance between the mean achievement scores of male and female students taught financial accounting using zoom classroom instructional resources

Source	Type III sum of square	df	Mean Square	F	Sig	Decision
Corrected model	52.098a	2	26.049	4.003	.036	
Intercept	91.291	1	91.291	14.028	.001	
Pretest	37.332	1	37.332	5.736	.028	Accept Ho
Gender	12.073	1	12.073	1.855	.190	
Error	117.140	18	6.508			
Total	36878.000	21				
Corrected total	169.238	20				

a. R Squared =.308 (Adjusted R Squared =.231)

Table 7 shows that F value of 1.86 and the P-value was .190 which is not statistically significant. The hypothesis will not be rejected as the P-value is greater than the level of Significance (P-value> 0.05). Thus the null hypothesis which states that there is no significant difference in the mean achievement score of male and female students when exposed to zoom classroom, is therefore accepted.

Discussion

The finding of the study revealed that google classroom and zoom classroom had a higher positive effect on the students' achievement scores than the conventional approach. The results of this study are in line with those of Daramola and Umoru (2021) who found out that google classroom had positive effects on the academic performance of business education students in cost accounting. While Okolo, Abah, Onechojo and Umoru (2022) found out that zoom learning platform was easy and useful to learn biology. The findings also agreed with Oyarinde and Komolafe (2020) who discovered that Google classroom platform positively affected students' academic achievement, attitudes and their perception during the pandemic in Nigeria secondary school. Findings also agreed with the study of Nnamni and Onumba (2023) who discovered that lecturing via online medium such as zoom facilitates greater achievement and interest than physical lecture method. Furthermore the finding of the study also revealed that male and female students taught financial accounting using mobile learning instructional resources (google classroom and zoom classroom) performed higher in their posttest scores than their counterparts taught with conventional classroom approach. This mean that both male and female students in the treatment group had mean

scores higher than those of the control group. Gender has no influence on the use of goggle classroom and zoom classroom to improve academic achievements of students. The finding is in line with the findings of Ekpo, Effiong, Bisong and Udoh (2022) discovered that there is no significant difference in the academic performance of students in Educational Technology taught using Google classroom and those taught using expository method based on gender. From the above finding it shows that students enjoy online teaching platform. Therefore, the use of mobile learning instructional resources (google classroom and zoom classroom) may become more actively in the teaching and learning of Financial accounting.

Conclusion

This study revealed that mobile learning instructional resources (google classroom and zoom classroom) can help improve business education students' academic achievement and retention in financial accounting. This is because it brings together the best of face-to-face class instruction and online learning modalities get students more involved as well as enabling self-paced learning.

Recommendations

1. Professional institutions regulating the practice of Accounting should insist that lecturers of financial accounting, and other aspects of Accounting, use mobile learning instructional resources (google classroom and zoom classroom) as it improves students' academic achievement.
2. University Management should consider the adoption of university-wide Learning Management Systems for increased acceptance of mobile learning instructional



resources in the teaching and learning of courses like financial accounting.

References

- Agbata, A. E., Okoro, S. C. & Onyeogubal, O. N. (2022). Role of accounting in sustainable development in Nigeria. *Annals of the university of Calabar. Journal of tourism communications and management*. 8 (2), 98-106.
- Ajua, B. C. (2020). Business education: Relevance and functionality in Nigeria philosophy of education. *Business Education Journal*. 3(2), 116-121.
- Akunya, L. I., Oleabhielle, E. O. & Ede, M. O., (2022). Effects of gender of students academic achievement and retention in Economics using Polya's problem solving instructional strategy. *Journal of Economics and Environmental Education*. 6 (1), 41-58
- Daramola, R. & Umoru, A. C. (2021). Effects of google classroom on academic performance of business education students in cost accounting in federal college of education. *Journal of Education and Practice*. 12(19), 31-37.
- Ekpenyong, E. E. (2018). Class size and students academic achievement in social studies in colleges of education in Cross River State, Nigeria. *International Journal of contemporary Social Science Education*. 1 (2), 10-17
- Ekpo, E. E., Effiong, A. N., Bisong, A. E., & Udoh, V. I. (2022). Effect of Google Classroom application on undergraduate students scores in Educational Technology in University of Calabar, Nigeria. *Journal of Education and Practice*. 6(3) 1-12.
- Ezeani, N. S. & Ogundola, M. C. (2016). Business education programme in Nigeria: Past, present and future in the 21st century. *Nigerian Journal of Business Education*. 3(1), 17-33.
- Itedjere, E. C. (2025) Impact of Mobile Learning on Academic Performance in Nigerian Secondary Schools. *International Journal of Arts and Humanities*. 13 (1) 10-2 DOI/ijah/10.54978
- Nnamni, M. N. & Onumba, C. A. (2023). Effect of zoom teaching and physical lecture method on undergraduate students' academic achievement and interest in health education in Enugu State University of Science and Technology (ESUT) Enugu. *Esut Journals of Education*. 6(1), 69-80.
- Obadiaru, I. (2020). Trends in academic achievement of senior secondary school students in computers studies in Rivers state. *Journal of the Nigerian Academy of Education*. 16 (2), 287-293.
- Ogbuanya T. C., Owudunni A. S. (2015) effect of reflective inquiry instructional Technique on student's academic achievement and ability level in electronic work Trade in Technical colleges. *Journal of education and practice* 6: 7 <https://files.evic.edu.gov/fuHey/E> 1083083
- Ogbuefi, T. O. I., & Ile, C. M. (2024). Utilization of Zoom Technologies and Google Classroom for Instructional Delivery by Business Educators in Tertiary Institutions in Anambra State. *International Journal of Innovative Education Research*. 12(2), 129-140.
- Okolo, D. O., Abah, A. M., Onechojo, E. J. & Umoru, S. E. (2022). Students' view on Zoom instruction technology in biology in colleges of Education in Nasarawa state Nigeria Implication for post COVID-19 instruction. *International Journal of Research and Advancement in Education methods*. 13 (1), 100-109.
- Onuotu, R. (2025) Challenges facing the poor performance of students in Accounting Education in federal college of education (technical) Omoku Rivers state. *International Journal of Business & Law Research*. 13(4), 492-501 doi:10.5281/zenodo.18039389
- Orhani, S. (2023). Philosophy of e-learning Vs. M-learning. *Futurity philosophy*. 2(4) 4-23. DOI: <https://doi.org/10.57125 Fp.2023 12.30.01>.
- Orji, A. & Idoghor, U. (2022). Traditional Vs modern teaching learning in Nigeria: A theoretical comparative analysis of the digital divide teachers' face in the classrooms. *International Journal of Advances in Engineering and management*. 4(9), 1232-1247.
- Oyarinde, O. N. & Komolafe, O. G. (2020). Impact of google classroom as an online learning delivery during COVID-19 pandemic: The case of a secondary school in Nigeria. *Journal of Education, Society and Behavioural Science*, 33(9), 53-61
- Smart, O. B. & Olutunu, D. F. (2023). Awareness and utilization of Google Classroom among undergraduate students of Ondo State University. *African Journal of Science Technology and Mathematics Education*. 9(6), 354-357. <https://www.ajstme.com>.