

# **3D-Animated Cartoon Instructional Package and Effective Teaching of Selected Topics in Financial Accounting in Pubic Secondary Schools, South-South, Nigeria**

**Prof. E. B. Usoro, Dr E. F. Ukoima & Dr Frank O. Udukeke**

University of Uyo

Faculty of Voc. Education, Library and Information Science

Department of Business Education

doi: <https://doi.org/10.37745/bje.2013/vol12n41932>

Published April 14, 2024

---

**Citation:** Usoro E.B., Ukoima E.F. and Udukeke F.O. (2024) 3D-Animated Cartoon Instructional Package and Effective Teaching of Selected Topics in Financial Accounting in Pubic Secondary Schools, South-South, Nigeria, *British Journal of Education*, Vol.12, Issue 4, 19-32

---

**ABSTRACT:** *This study was carried out to determine the difference in students' academic performance in financial accounting when taught using 3D-cartoon animation package and a conventional approach. The selected topics for the study include transaction analysis, accounting equation, cash book and ledger. The research design the researchers adopted for this study was quasi quasi-experimental method and the area of the study was South-South, Nigeria. The population of the study consisted of 242,052. The sample size was 192 and a purposive sampling technique was used for the study. The Financial Accounting Achievement Test (FAAT) was used to collect data for the study. The internal consistency index of .92 was obtained using test-retest. The data were analyzed using mean and standard deviation to answer research questions and ANCOVA to test the null hypotheses at .05 level of significance. Among other recommendations made was that the government should encourage schools to embrace the latest teaching strategies by way of providing the 3D instructional package for use in schools.*

**KEYWORDS:** 3d-animated cartoon, instructional package , teaching, financial accounting, pubic secondary schools, South-South, Nigeria

---

## **INTRODUCTION**

In recent times, the trend of research particularly in the teaching profession has been to bring on board methods and strategies that will offer help to students towards learning fast and with ease. One of the areas that urgently needs a simplified approach is the financial accounting subject

particularly some selected topics that are tricky to understand for students like - the double entry principle as relates to transaction analysis, accounting equation, making of entries into cash book and postings to ledger. This is because the double entry principle is the basis upon which a greater portion of the curriculum content of financial accounting rests. However, it does appear that students are deficient in mastering this principle. WASSE examiners' report in recent times indicates an unimpressive performance by financial accounting students. This situation, therefore requires a change of the continuous use of the same instructional media that probably contributed (either wholly or partly) to the inability to elicit good performance from students in financial accounting; hence, the need to develop and deploy 3D-cartoon animated instructional package for effective teaching of selected topics in financial accounting.

Financial accounting is the systematic process of collecting, recording, preparing, presenting analyzing, summarizing and interpreting financial statements (which include: statement of profit or loss, statement of financial position, cash flow statement and notes to the accounts, among others) for the users. The inability of financial accounting students to prepare the different statements commonly found in the subject could be attributed to their poor understanding of the double entry principle. However, Obiedat et al. (2014) advised that financial accounting teachers should always use instructional packages in their teaching deliveries to help address students' misunderstanding of the basic principles. This was supported by Okonkwo and Ugwa (2018), who maintained that Financial Accounting is a captivating and pertinent area of academic inquiry when an appropriate teaching approach is used.

### **Statement of the Problem**

The word double entry often makes many students' eyes glaze over with boredom when this fundamental principle of financial accounting is mentioned. To worsen the situation is the fact that, today's society is extremely time-pressed and always on the go, as seen among the younger generation given little time to reading. Students now grow up in an environment that is surrounded by technology; and as technology continues to develop and prices become more affordable, we see more students with gadgets which make them fit in their business, engagements and leisure into academic activities. This situation obviously suggests that students need teachers to embrace this technology which has already formed part of their lives. Unfortunately, the practice is far from this. Teachers rather teach students with the conventional jug-mug approach using talk-chalk and the learning outcome of this approach has been unimpressive, especially in external examinations like the West African Senior Secondary School Certificate Examination (WASSCE) in Financial Accounting between 2015 and 2020 (WAEC examiners' report, 2020). The implication is that the fabric of the nation's pride (in terms of the quality of human resource possessed) is gradually being lost to the smaller nations like Ghana due to the poor performance of our students.

Therefore, the mind-boggling question is "what can the teacher do to help or change the narrative?" of course, teachers cannot change the way our students are or the environment that controls the

pace at which students assimilate facts. Teachers cannot also change the skill sets students bring to the classroom; rather what the contemporary teacher can do is to adapt the resources and the way they teach financial accounting to the learning approach of the students by initiating a seamless teaching approach like 3D-animation cartoon instructional package that adapts to mobile gadgets wherein it could not only be learnable on-the-go but also bring the abstract nature of the principle to reality. Hence, this study sought to enhance students' understanding of the subject which manifested in the increase in students' success rates in internal, external and higher education examinations. The researchers believe that once financial accounting students understand the double entry principle and how to make entries into the debit and credit sides of accounts, that students can handle a greater portion of problems in financial accounting.

### **Theoretical Framework**

The theory that provided a linchpin for the study was the principle of double entry. The principle was propounded by Luca Pacioli in 1894. The theory states that every transaction has at least two effects on the financial statements. For every debit, there is always a corresponding credit and the total debits must equal the total credits in the general ledger. This principle is relevant to the study because it is the base upon which financial accounting revolves which stipulates. Understanding this principle is important to students to grasp key concepts like the difference between debits and credits, and how transactions are recorded in the general ledger and a 3D-animated cartoon instructional package might be a fun and engaging way to teach these concepts/principles to the students.

### **Purpose of the study**

The main objective of the study was to determine the difference in the mean performance score of students in financial accounting when taught with a 3D-animation cartoon instructional package and a conventional instructional approach. Specifically, the study sought to determine the difference in the mean performance score of students in financial accounting when taught:

- 1) Transaction analysis
- 2) Accounting equation
- 3) Cash book entry
- 4) Ledger posting

### **Research Questions**

The following research questions were formulated to guide the study:

- 1) What is the difference in the mean performance score of students in transaction analysis when taught with 3D-animated cartoon instructional package and conventional approach?
- 2) What is the difference in the mean performance score of students in accounting equation when taught with 3D-animated cartoon instructional package and conventional approach?

- 3) What is the difference in the mean performance score of students in cash book entry when taught with 3D-animated cartoon instructional package and conventional approach?
- 4) What is the difference in the mean performance score of students in ledger posting when taught with 3D-animated cartoon instructional package and conventional approach?

### Research Hypotheses

- H<sub>01</sub>** There is no significant difference between the mean performance score of students in transaction analysis when taught with 3D-animated cartoon instructional package and conventional instructional approach
- H<sub>02</sub>** There is no significant difference between the mean performance score of students in accounting equation when taught with 3D-animated cartoon instructional package and conventional instructional approach
- H<sub>03</sub>** There is no significant difference between the mean performance score of students in cash book entry posting when taught with 3D-animated cartoon instructional package and conventional instructional approach
- H<sub>04</sub>** There is no significant difference between the mean performance score of students in ledger posting when taught with 3D-animated cartoon instructional package and conventional instructional approach

### RESEARCH METHOD

The design for the study was quasi-experimental. The study was conducted in South-South, Nigeria. Data on students' performance were collected from 180 students who were drawn from intact classes in each of the states.

Experimental	O <sub>1</sub> X O <sub>2</sub>	O <sub>1</sub> O <sub>3</sub> = Pretests
Control	O <sub>3</sub> X O <sub>4</sub>	O <sub>2</sub> O <sub>4</sub> = Posttests

X <sub>1</sub>	=	Treatment (teaching) administered to the experimental group
O <sub>1</sub>	=	Pretest administered to the experimental group
O <sub>2</sub>	=	post-test administered to the experimental group
O <sub>3</sub>	=	Pretest administered to the control group
O <sub>4</sub>	=	post-test administered to the control group

The target population for the study comprised 242,052 Senior Secondary School One Students during the 2022/2023 academic session. This level of students was considered appropriate for the study because the topic – double entry is part of the curriculum for the class chosen. By experimenting with it at this level, the impact would be useful as it would reflect in either a favourable number of students who would offer the subject or otherwise in their SS2.

A total of 192 students were selected as sample through the purposive sampling technique for the study. The intact classes that comprised the sample for the study were Akwa Ibom – 34, Bayelsa – 30, Cross Rivers State – 32, Rivers – 31, Delta State – 30, and Edo State – 35. In order to meet up with the purposive sampling procedure rule, some criteria were set up as follows:

- (1) The school must offer financial accounting as a subject
- (2) The school must be a public secondary school.
- (3) The school must comprise both junior and senior secondary arms.
- (4) The school must have ICT and support facilities
- (5) They must have a teacher assigned or designated to teach the subject – Financial Accounting
- (6) The school must have a teacher who must have qualification not below a Bachelor of Science degree in Business Education
- (7) The school must have a teacher who must be someone who is licensed by the Teachers' Registration Council of Nigeria (TRCN).
- (8) The school must have a teacher who must have a cognate teaching experience of not fewer than five years in the teaching of financial accounting.
- (9) The school must have a teacher who must be experienced with the use of technology in teaching financial accounting. Schools that meet the aforementioned criteria were selected.

In order to determine the difference in the performance of students, respondents were required to respond to the researchers' developed test - pretest and post-test. The research instrument employed for data collection was the Financial Performance Test (FPT). The survey employed a set of 30 multiple-choice questions to assess the viewpoints of the participants. Three experts carried out both face and content validities. Two experts were drawn from the Faculty of Education (Psychological Foundations Department) and the Faculty of Vocational Education, Library, and Information Science's - Business Education Department respectively and one from the Department of Business Education, University of Port Harcourt. To ensure language clarity and item suitability, experts were asked to independently review the instrument is concerned. They were also encouraged to provide any suggestions they deemed beneficial. The lesson designs for both the 3D-animated cartoon instructional package and conventional instruction modalities, as well as the Financial Performance Test (FPT), underwent content validation.

The dependability of the FPT was assessed by a test-retest reliability analysis. The researcher randomly selected a sample of thirty students from the study population and administered the instrument to them. The acquired data was evaluated using the Pearson Product Moment Correlation (PPMC) method, which yielded a reliability coefficient of 0.86, indicating that the instrument employed in the study was reliable for the intended objectives. In order to ascertain the consistency of both the instrument and the data, it is necessary to employ the reliability coefficient. The Financial Performance Test (FPT) was delivered by regular classroom teachers to students in both the experimental and control groups as a pre-testing measure. Subsequently, over the course

of the following 160 minutes, the experimental group received instruction based on the 3D-animated cartoon instructional package pertaining to four distinct topics. Similarly, the control group had instruction on the same four topics, utilizing the same approach. The cumulative duration of instructional sessions amounted to 160 minutes, with each session occurring once a week over a period of six weeks. The subjects of discussion in both the experimental and control groups were identical. Following a six-week therapy period, both the experimental and control groups undertook a post-test assessment using the FPT. The purpose of this assessment was to determine whether there existed a statistically significant alteration in student performance, which was subsequently compared between the two groups.

The following experimental conditions were observed to eliminate invalidity.

- i. Experimental Bias: To avoid any experimental bias, the researchers were not directly involved in the administration of the test, rather, the regular class teacher in the participating classes (SS1) was engaged to teach their students in both experimental and control groups.
- ii. Teacher variability: To control the invalidity and ensure a uniform standard in the conduct of the research, the researchers personally prepared the lesson plans (on the selected topics). The same lesson content was taught to both groups without informing them of their involvement in the research process. This enabled them to be natural and prevented them from acting in any manner that influenced the result of the research negatively or positively.
- iii. Training of Teachers: A two-week intensive briefing programme was organized for the participating teachers. Financial accounting teachers in the experimental group were given detailed explanations of the use and application of 3D-animated cartoon instructional package. At the end of the training, the researchers organize a micro-teaching session for the participating teachers to ensure their mastery of the instructional package.

This research was conducted based on the findings derived from the Financial Performance Test (FPT). The regular classroom instructors administered the FPT test as a preliminary assessment to six randomly selected intact classes. The evaluation following the treatment was carried out on both the control and experimental groups. The pre-and post-test scores of the experimental group were recorded and afterwards compared to the pre-and post-test scores of the control group. Pre-treatment test was administered to each group, followed by the administration of a post-treatment test. Subsequently, the field data was coded and analyzed using mean statistics for research and the hypotheses were tested using ANCOVA at 0.05 level of significance. As a decision rule, SPSS output was compared with the estimated significance level of 0.05 to evaluate the hypotheses. Hypotheses were rejected when the estimated probability value ( $p$ ) was less than the alpha threshold (0.05) while the null hypothesis was confirmed if the probability exceeded alpha.

## RESULTS

### Research question 1

What is the difference in the mean performance score of students in transaction analysis when taught using a conventional approach and 3D-animated cartoon instructional package?

**Table 4.1: Mean difference of students' pre-test and post-test scores in Transaction Analysis when taught using 3D-animated Cartoon Instructional Package and Conventional Approach (n = 192)**

Groups	N	Pre-test		Post-test		Mean Difference
		Mean	SD	Mean	SD	
Experimental	91	2.14	1.43	7.78	1.68	5.64
Control	101	2.12	1.33	5.11	1.70	2.99

Source: Field Data (2023)

The result in Table 1 shows that “the pretest and posttest scores of students in the experimental group are 2.14 and 7.78 respectively with standard deviation (SD) of 1.43 and 1.68. Table 1 also shows that the mean pretest and post-test scores of students in the control group were 2.12 and 5.11 respectively with SD of 1.33 and 1.70. It could be observed that students in the experimental group who were taught with 3D-animated cartoon instructional package had a high mean difference of 5.64 as against 2.99 obtained in the control group who were taught with conventional instructional strategy. The result suggests that 3D-animated cartoon instructional package enhances students' academic performance in transaction analysis than conventional instructional strategy.

### Research question 2

What is the difference in the mean performance score of students in accounting equation when taught with 3D-animated cartoon instructional package and conventional approach?

**Table 2: Mean difference of students' pre-test and post-test scores in accounting equation when taught with 3D-animated cartoon instructional package and conventional instructional approach (n = 192)**

Groups	N	Pre-test		Post-test		Mean Difference
		Mean	SD	Mean	SD	
Experimental	91	2.32	1.23	7.50	1.81	5.18
Control	101	2.34	1.14	5.14	1.98	2.80

Source: Field Data (2023)

The result in Table 2 shows that the pretest and posttest scores of students in the experimental group are 2.32 and 7.50 respectively with standard deviation (SD) of 1.23 and 1.18. Table 2 also

shows that the mean pretest and post-test scores of students in the control group were 2.34 and 5.14 respectively with SD of 1.14 and 1.98. It could be observed that students in the experimental group who were taught with 3D-animated cartoon instructional package had a high mean difference of 5.18 as against 2.80 obtained in the control group who were taught with conventional instructional approach. The result suggests that 3D-animated cartoon instructional package enhances students' academic performance in accounting equation than conventional instructional approach.

### Research question 3

What is the difference in the mean performance score of students in cash book when taught with 3D-animated cartoon instructional package and conventional instructional approach?

**Table 4.3: Mean difference of students' pre-test and post-test scores in cash book when taught with 3D-animated cartoon instructional package and conventional instructional approach (n = 192)**

Groups	N	Pre-test		Post-test		Mean Difference
		Mean	SD	Mean	SD	
Experimental	91	2.18	1.14	7.94	1.57	5.76
Control	101	2.22	1.33	5.08	1.96	2.86

**Source:** Field Data (2023)

The result in Table 3 shows that the pretest and posttest scores of students in the experimental group are 2.18 and 7.94 respectively with standard deviation (SD) of 1.14 and 1.57. Table 3 also shows that the mean pretest and post-test scores of students in the control group were 2.22 and 5.08 respectively with SD of 1.33 and 1.96. It could be observed that students in the experimental group who were taught with 3D-animated cartoon instructional package had a high mean difference of 5.76 as against 2.86 obtained in the control group who were taught with conventional instructional approach. The result suggests that 3D-animated cartoon instructional package enhances students' academic performance in cash book than conventional instructional approach.



**Research question 4**

What is the difference in the mean performance score of students in ledger posting when taught with 3D-animated cartoon instructional package and conventional instructional approach?

**Table 4.4: Mean difference of students’ pre-test and post-test scores in ledger posting when taught with 3D-animated cartoon instructional package and conventional instructional approach (n = 192)**

Groups	N	Pre-test		Post-test		Mean Difference
		Mean	SD	Mean	SD	
Experimental	100	2.42	1.08	8.22	2.14	5.80
Control	100	2.46	1.06	5.72	2.07	3.26

Source: Field Data (2023)

The result in Table 4 shows that the pretest and posttest scores of students in the experimental group are 2.42 and 8.22 respectively with standard deviation (SD) of 1.08 and 2.14. Table 4 also shows that the mean pretest and post-test scores of students in the control group were 2.46 and 5.72 respectively with SD of 1.06 and 2.07. It could be observed that students in the experimental group who were taught with 3D-animated cartoon instructional package had a high mean difference of 5.80 as against 3.26 obtained in the control group who were taught with conventional instructional approach. The result suggests that 3D-animated cartoon instructional package enhances students’ academic performance in ledger posting than conventional instructional approach”.

**Research Hypotheses**

**Ho1** There is no significant difference between the mean performance score of students in transaction analysis when taught with 3D-animated cartoon instructional package and conventional instructional approach

**Table 5: Summary of Analysis of Covariance (ANCOVA) of mean scores of students taught using and 3D-animated cartoon instructional package and conventional approach in teaching transaction analysis**

Source of Variation	Sum of Squares	df	Mean Square	F	Sig. Level
Corrected Model	4113.08	1	2056.54	19.49	.000
Intercept	15378.26	1	15378.68	102.68	.000
Pretest	295.78	1	295.78	2.66	.108
3D-animation	3632.14	1	3632.14	29.661	.000
Error	7681.36	190	126.11		
Total	131100.63	192			
Corrected Total	97942.44	191			

\*significant at .05 alpha level

Source: Field Data (2023)

The result in Table 5 shows that the calculated F-ratio for the difference in academic performance of students when taught transaction analysis using 3D-animated cartoon instructional package and conventional approach is 29.66, while its corresponding probability level of significance is .00 alpha. This level of significance is less than 0.05 in which the decision was based. With this result, the null hypothesis is rejected. This implies that there is a significant difference in academic performance of students when taught transaction analysis using a 3D-animated cartoon instructional package.

**H<sub>02</sub>** There is no significant difference between the mean performance score of students in accounting equation when taught with 3D-animated cartoon instructional package and conventional instructional approach

**Table 6: Summary of Analysis of Covariance (ANCOVA) of mean scores of students taught with 3D-animated cartoon instructional package and conventional instructional approach in teaching accounting equation**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	494.67 <sup>a</sup>	2	247.33	98.86	.00
Intercept	742.39	1	742.39	296.74	.00
Pretest	216.19	1	216.19	86.41	.00
3D-Animation	212.64	1	212.64	84.99	.00
Error	492.86	197	2.50		
Total	8976.00	200			
Corrected Total	987.52	199			

\*significant at .05 alpha level

**Source:** Field Data (2023)

The result in Table 6 shows that “the calculated F-ratio for the difference in academic performance of students’ when taught accounting equation using 3D-animated cartoon instructional package and conventional instructional approach is 84.99, while its corresponding probability level of significance is .00 alpha. This level of significance is less than .05 on which the decision was based. With this result, the null hypothesis is rejected. This implies there is a significant difference in academic performance of students when taught accounting equation using 3D-animated cartoon instructional package.

**H<sub>03</sub>** There is no significant difference between the mean performance score of students in cash book entry when taught with 3D-animated cartoon instructional package and conventional instructional approach

**Table 7: Summary of Analysis of Covariance (ANCOVA) of mean scores of students taught with 3D-animated cartoon instructional package and conventional approach in teaching cash book entry analysis**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	692.07 <sup>a</sup>	2	346.04	200.55	.00
Intercept	919.63	1	919.63	532.98	.00
Pretest	283.09	1	283.09	164.07	.00
3D-Animation	162.09	1	162.09	93.96	.00
Error	339.91	197	1.73		
Total	9508.00	200			
Corrected Total	1031.98	199			

\*significant at .05 alpha level

**Source:** Field Data (2023)

The result in Table 7 shows that the calculated F-ratio for the difference in academic performance of students when taught cash book entry using 3D-animated cartoon instructional package and conventional instructional approach is 93.96, while its corresponding probability level of significance is .00 alpha. This level of significance is less than .05 on which the decision was based. With this result, the null hypothesis is rejected. This implies that there is a significant difference in academic performance of students when taught cash book entry using 3D-animated cartoon instructional package.

#### Null Hypothesis 4

There is no significant difference between the mean performance score of students in ledger posting when taught with 3D-animated cartoon instructional package and conventional instructional approach

**Table 8: Summary of ANCOVA analysis of the mean performance of students taught with 3D-animated cartoon instructional package and conventional instructional approach**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	754.90 <sup>a</sup>	2	377.45	170.19	.00
Intercept	400.90	1	400.90	180.76	.00
Pretest	442.40	1	442.40	199.47	.00
3D-Animation	209.56	1	209.56	94.48	.00
Error	436.92	197	2.22		
Total	10908.00	200			
Corrected Total	1191.82	199			

\*significant at .05 alpha level

**Source:** Field Data (2023)

The result in Table 8 shows that the calculated F-ratio for the difference in academic performance of students when taught ledger posting using 3D-animated cartoon instructional package and conventional instructional approach is 94.48, while its corresponding probability level of significance is .00 alpha. This level of significance is less than .05 in which the decision was based. With this result, the null hypothesis is rejected. This implies there is a significant difference in the academic performance of students when taught ledger posting using 3D-animated cartoon instructional package.

## **FINDINGS OF THE STUDY**

1. The findings of the study are presented based on the research questions and hypotheses. The mean score of students taught transaction analysis using 3D-animated cartoon instructional package was higher than those taught using a conventional instructional approach. The difference was significant and in favour of the experimental group implying that 3D-animated cartoon instructional package significantly enhances academic performance in transaction analysis than the conventional instructional approach.
2. The mean score of students taught accounting equation using 3D-animated cartoon instructional package was higher than those taught using a conventional instructional approach. The difference was significant and in favour of the experimental group implying that a 3D-animated cartoon instructional package significantly enhances academic performance in accounting equation than the conventional instructional approach.
3. The mean score of students taught cash book entry using a 3D-animated cartoon instructional package was higher than those taught using a conventional instructional approach. The difference was significant and in favour of the experimental group implying that 3D-animated cartoon instructional package significantly enhances academic performance in cash book entry than the conventional instructional approach.
4. The mean score of students taught ledger posting using a 3D-animated cartoon instructional package was higher than those taught using a conventional instructional approach. The difference was significant and in favour of the experimental group implying that 3D-animated cartoon instructional package significantly enhances academic performance in ledger posting than conventional instructional approach.

## **DISCUSSION OF FINDINGS**

The study revealed a statistically significant deviation of students' academic performance from the average when they were instructed using a 3D-animated cartoon instructional package. Hence, a 3D-animated cartoon instructional package is preferred over a conventional instructional approach. This assertion aligns with the perspective put out by Okonkwo and Ugwa (2018), who argue that Financial Accounting is a captivating and pertinent area of academic inquiry when an appropriate instructional approach is deployed and this agrees with the findings of Obiedat et al. (2014), who

maintained that the use of 3D-animated cartoon instructional package in the classroom has been found to have a positive and significant impact on students' academic achievement.

## **CONCLUSION**

The aforementioned conclusion is substantiated by the findings derived from the study of the data. There is a notable disparity in the academic achievements of students in financial accounting in south-south, Nigeria, depending on whether they are exposed to 3D-animated cartoon instructional package or a conventional instructional approach. Individuals who received instruction on transaction analysis, accounting equation, cash book entry and ledger posting through a 3D-animated cartoon instructional package demonstrated superior performance compared to those who underwent a conventional instructional approach

### **Educational Implications of Findings**

The findings indicate that the utilization of 3D-animated cartoon instructional package has the potential to facilitate a more individualized approach to acquiring in-depth knowledge in financial, such as understanding the principles of double entry. This would be advantageous for students who possess diverse aptitudes and shortcomings within the educational setting. The findings also reveal that the implementation of a mixed teaching technique has the potential to enhance students' motivation and interest in the subject matter, specifically in relation to the double entry principle, by creating a more dynamic and engaging learning environment.

The findings indicate that the implementation of a 3D-animated cartoon instructional package has the potential to create a versatile educational setting, hence offering advantages to students in terms of rapid understanding of double entry principle. This is particularly relevant for individuals with learning difficulties.

### **Recommendations**

Based on the findings of the study. The following recommendations were made:

- i. The government should encourage schools to embrace the latest teaching strategies by way of providing instructional packages for use.
- ii. Parents should assist their wards to key into the fast innovation in education by giving them what they can afford in terms of the gadgets and materials needed for 3D-animated cartoon instructional package.
- iii. Teachers especially those teaching financial accounting should endeavour to explore more in 3D-animation in relation to teaching of students of financial accounting.

### **Funding**

This research is funded by the Tertiary Education Trust Fund (TETFund), Nigeria.

### **Declaration of competing interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### **Acknowledgments**

We acknowledge the anonymous reviewers for their invaluable comments that have contributed to improving the quality of this paper.

### **REFERENCES**

- Okonkwo, C. J. and Ugwa, M. (2018). Strategies for effective teaching and learning of business studies in secondary schools in Enugu North Local Government Area, Enugu State. *International Journal of Educational Research*,1(1), 1-15.
- Obiedat F. K., Wilson, B., Dadila, G. I. and Torgerson, C. J. (2014). Single group, pre-and post-test research designs: Some methodological concerns. *Oxford Review of Education*, 38:583–616.