

# Relative Effectiveness Of Just-In-Time Teaching And Peer Instructional Strategies On Students' Retention In Financial Accounting In Colleges Of Education

Enwere, Judith Ogechi; Prof. J.I. Ezenwafor; Prof.T.I Eze

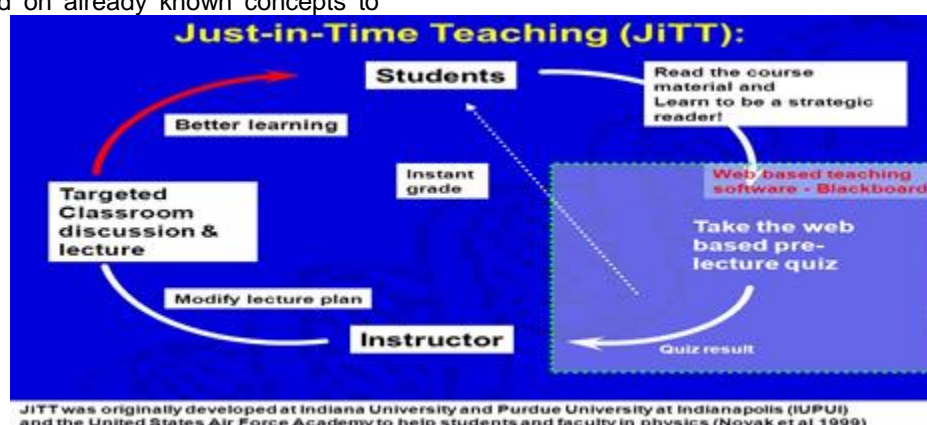
**Abstract Students'** : academic achievement and retention in Financial Accounting depends largely on the use of instructional approaches by teachers. The popular use teacher-centered instructional methods have been found to contribute to students' poor academic achievement and retention in different school subjects including Financial Accounting. The need to improve students' academic retention in Financial Accounting necessitated this study on relative effectiveness of Just-in-Time Teaching (JiTT) and Peer Instructional (PI) strategies on students' Academic Retention in Financial Accounting in Colleges of Education in Anambra State. One research question guided the study and one null hypothesis was tested. Quasi experimental design, specifically, non-randomised, pre-test, post-test, non-equivalent group designed was used for the study. The population of the study was 167 NCE II business education students from the two Colleges of Education in Anambra State. The entire population was used in their intact classes. The two classes were randomly assigned to PI and JiTT groups. Instrument for data collection was Financial Accounting Retention Test (FART) developed by the researcher. The instrument was validated by three experts. Kuder Richardson formula 20 (KR-20) was used to ascertain the reliability index of the instrument and the index value of 0.90 was obtained. Pre-test, post-test and delayed test were given to the groups. Data collected for the study were analyzed using mean and standard deviation to answer the research question and analysis of Covariance (ANCOVA) for testing hypothesis at 0.05 level of significance. Findings of the study revealed that the treatments improved the post-test achievement scores of students when compared with their pre-test scores. Therefore, it was concluded that JiTT and PI strategies have significant effects on students' academic retention in Financial Accounting. However, JiTT strategy was found to be more effective than PI strategy. Based on the findings of the study, it was concluded that JiTT and PI are effective teaching strategies for improving students' academic retention in Financial Accounting. The study recommended, among others that Accounting lecturers at Colleges of Education should formally adopt JiTT strategy which is interactive in order to improve students' academic retention. Also, accounting students should be encouraged to use JiTT strategy in the learning of Financial Accounting since it enhances academic retention.

**Key word:** Just-in-Time Teaching, Peer Instructional Strategy, Retention, Financial Accounting.

## 1 INTRODUCTION

Financial Accounting is a branch of accounting that is concerned with the reporting of financial information. Financial Accounting as the process of identifying, measuring and communicating economic information (Ishaq, (2011). Eze (2014) added that financial accounting is used to report financial data of an organization to the users for objective assessment and decision making. In line with this, Enwere (2012) observed that generally, Financial Accounting aims at providing specialized instruction to prepare students to assume their economic role as consumers, workers and citizens. Enwere further explained that instruction in Financial Accounting is to assist students in preparing for professional careers requiring advanced studies in Financial Accounting as well as to acquire skill for personal use in future. In order to achieve laudable aims of teaching Financial Accounting, teachers employ various conventional teaching methods such as lecture method which appears to be inadequate in suitably motivating students for high academic retention (Obunadike, 2012). Enhancing academic achievement and retention constitutes the major role of the teacher. Pintrish (2018) explained that the ability of a student to recall and apply knowledge acquired in school to practical situation outside the school indicates the student academic retention. Retention in school is all about mastery of learning contents and remembering of facts which form framework on which more complex concepts depend (Ebenebe&Unachukwu in Enwere, 2012). According to Enwere, Retention is a preservation of the after effects of experience and learning that makes recall or recognition possible. It is also a persistence of learned behaviours or experiences during a period when they are being performed or practiced. Retention in Financial Accounting is therefore, of great importance because the concepts are hierarchical in nature requiring students to build on already known concepts to

establish an unknown. This entails that Financial Accounting concepts need to be presented to the learners in a way that makes their recall fast and easy. It is generally observed that teachers can help students retain information and avoid confusing if they vary their methods of presentation for different materials. In teaching Financial Accounting, variation in teaching methods is also well recognized and applied to some extent but students' poor academic retention in the subject is still being recorded. Adeleke, Binumote and Adeyinka (2013) observed that causes of poor academic retention of students in Financial Accounting could be attributed to some factors such as lack of qualified teachers, lack of relevant instructional materials and use of ineffective teaching methods among others. Among all these factors, Obidile (2017) posited that teachers' method of instruction has been viewed to have direct impact on students' academic retention. Lecture method of teaching is predominately used by Financial Accounting lecturers in Colleges of Education in Anambra State. Lecture method as a teacher-centred method of teaching favours large class and content coverage but involves low interaction among students. Jimoh (2014) opined that the use of student centred teaching methods such as problem-based methods, Just-in-Time Teaching (JiTT) and Peer Instructional (PI) strategies among others could improve students' academic retention better than teacher-centred methods/strategies. Just-in-Time Teaching is a pedagogical technique that was first implemented in the late 1990s in an introductory physics course to address non-traditional students' needs (Novak, 2011). Novak (2014) defined JiTT as a teaching and learning strategy based on the interaction between web-based study assignments and an active learner classroom. The model of JiTT is presented below:



These JiTT exercises or “JITTs” are short assignments typically focusing on the material that will be covered in the next class –that is, students are required to read ahead on their own to answer the questions. Once submitted, instructors review students’ JiTT responses a few hours prior to class and use the responses to organize and modify the upcoming classroom session –hence the “just-in-time” label. Excerpts from students’ submissions are presented during the class as the basis for discussion, replacing the traditional lecture, and are used to develop follow up exercises that groups of students work on in class. Several studies have reported the efficacy of JiTT in enhancing students’ academic retention in different subjects. For

instance, Simkins and Maier (2014) reported that the use of JiTT in teaching economics improved students’ retention. In the same vein, Marrs and Novak (2014) reported that the use of JiTT as a teaching method led to students’ high retention in Biology. Furthermore, Marr, Blake and Gavrin (2013) reported improved students’ retention in biology, chemistry and physics as a result of using JiTT teaching strategy. Peer Instructional (PI) strategy on the other hand, is an interactive teaching strategy that promotes classroom interaction to engage students and address difficult aspects of the material (Mazur & Watkins 2010). The processes involved in the PI are as shown in figure 1:

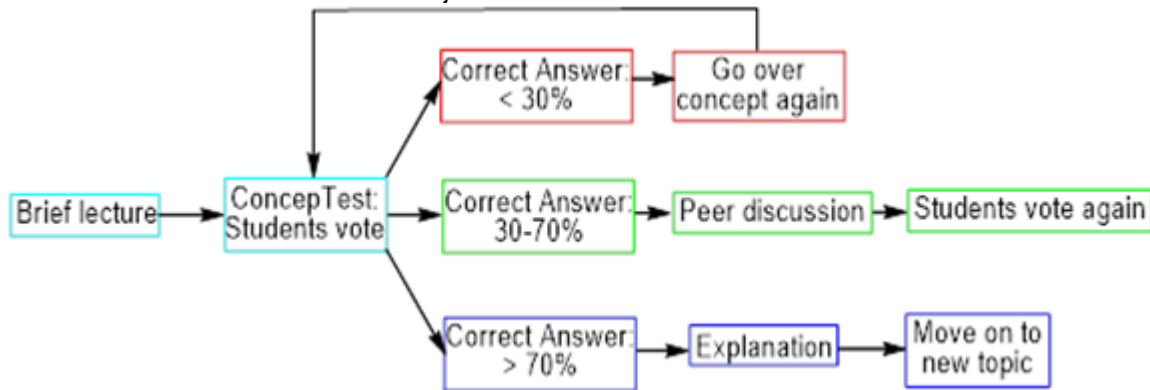


Figure 1: PI Implementation Processes

To implement concept tests and PI, Watkins and Mazur(2010) explained that the teacher briefly presents a topic after which the students reflect on what they have learnt through a concept test. After thinking about the question for a couple of minutes students vote individually on an answer. If 30–70 percent of students answer the question correctly the teacher asks them to turn to their neighbours and discuss their answers, in pairs or small groups, preferably with someone who voted differently. The teacher then moves around the class promoting active discussions to direct student thinking. After several minutes the students vote again and the teacher goes through the correct answer. Depending on the student responses, the teacher may ask another concept test on the same topic or move onto a different topic. PI facilitates students their skills in critical listening and the creation of solid arguments. Regardless of discipline, PI enables students to generate and retain knowledge through discussion with their peers and to actively participate in the subject which they are studying (Novak, 2014). Literature showed that both JiTT and PI strategies have improved students’ academic performance and retention in subjects like Physics, Economics, Biology Geoscience, philosophy, Mathematics among others (Mazur,2014 Terrell, Connelly, Henderson, & Strichartz, 2012 ; Steer & McConnell, 2011). However, the relative effectiveness of the two teaching strategies on students’ academic achievement and retention in Financial Accounting do not seem to have been empirically established hence this study on relative effectiveness of JiTT and PI strategies on students’ academic retention in financial accounting in Colleges of Education in Anambra State.

### 1.1 Purpose of the Study

The purpose of this study was to determine the relative effectiveness of JiTT and PI strategies on students’ academic retention in Financial Accounting in Colleges of Education in Anambra State. Specifically, this study determined:

1. Relative effectiveness of JiTT and PI strategies on students’ mean academic retention in Financial Accounting in Colleges of Education in Anambra State.

### 1.2 Research Questions

One research question guided the study:

1. What is the relative effectiveness of JiTT and PI strategies on students’ mean academic retention in financial accounting in Colleges of Education in Anambra State?

### 1.3 Hypothesis

One hypothesis was tested at 0.05 level of significance; thus

1. There is no significant difference in the effectiveness of JiTT and PI strategies on students’ mean academic retention in Financial Accounting in Colleges of Education in Anambra State.

## 2. METHOD

Quasi- experimental design, specifically, non-randomised, pre-test, post-test, non-equivalent group design was used for the study. The area of study was Anambra State. The population of the study was 167 NCE II business education students from the two Colleges of Education of the State. The entire population was used in their intact classes and randomly assigned to PI group and JiTT group. Instrument for data collection was Financial Accounting Retention Test (FART) which was validated by three experts. KuderRichardson formula 20 (KR-20) was used to ascertain the reliability index of the instrument and a reliability index of 0.90 was obtained. The experiment lasted for nine weeks. Pre-test, post-test and delayed test were given to the groups. Data collected for the study were analysed using mean and standard deviation to answer the research questions while Analysis of Covariance (ANCOVA) was used to test the hypothesis at 0.05 level of significance.

## 3. RESULTS

Table 2: Mean on Retention Scores of Students taught Financial Accounting with JiTT and PI strategies

Strategies		Post test	Retention	Mean Difference
JiTT	Mean	62.84	79.68	16.84
	N	120	120	
	Std. Deviation	8.948	9.259	
PI	Mean	51.57	56.02	4.45
	N	47	47	
	Std. Deviation	6.450	6.163	

Table 2 reveals that the posttest and mean retention scores of students taught with JiTT are 62.84 and 79.68 respectively; while the mean difference between the pretest and retention scores in JiTT is 16.84. The table also reveals that the posttest and mean retention scores of the students

taught with PI are 51.57 and 56.02 respectively; while the corresponding mean difference is 4.45. This shows that the mean retention scores of students exposed to JiTT in Financial Accounting is higher than the mean retention scores of those exposed to PI.

**Table 2: ANCOVA Summary on Mean Academic Retention Scores of Students taught Financial Accounting with JITT and PI strategies**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	11756.880 <sup>a</sup>	2	5878.440	179.584	.000	.687
Intercept	7309.219	1	7309.219	223.293	.000	.577
Pretest	4496.616	1	4496.616	137.370	.000	.456
Strategies	3641.305	1	3641.305	111.240	.000	.404
Error	5368.330	164	32.734			
Total	532582.000	167				
Corrected Total	17125.210	166				

Table 8 shows the ANCOVA results on the relative effectiveness of JITT and PI strategies on students' mean retention scores. The table revealed significant difference ( $F = 111.240$ ,  $p < .001$ ,  $\eta^2_p = .404$ ) in the relative effectiveness of JITT and PI strategies on the students' mean retention scores in Financial Accounting was significant, with students exposed to JITT having higher mean retention scores than those exposed to PI. The null hypothesis is therefore rejected. Thus, there is significant difference in the relative effectiveness of JITT and PI strategies on students' mean retention scores in Financial Accounting.

#### 4. DISCUSSION

Findings of the study revealed that the mean retention scores of students taught Financial Accounting with JITT was higher than that of those taught with PI with 16.84 mean retention difference for JITT group against 4.45 for PI group. Again, there is significant difference in the relative effectiveness of JITT and PI strategies on students' mean academic retention in Financial Accounting. The above findings are supported by the earlier reviewed literature. For instance, Richard (2014) which revealed that JITT strategy increased students' retention of concepts. This finding were not in agreement with the findings of Eryilmaz (2014) which found out that students taught with PI strategy were able to retain more than those with traditional teaching method. Similarly, the findings were not in line with Ouka, Aurah and Amadalo (2015) which revealed that that students retained more with PI than with conventional methods.

#### 5. CONCLUSION

Based on the findings of this study, a number of conclusions could be drawn, namely that JITT is a powerful innovation in the teaching and learning of Financial Accounting which is capable of improving the mean retention scores of students. These findings agree with the findings made overseas in favour of JITT method of instruction. It implies that environmental factors (be it a developed or non-developed) do not form any obstruction in the application of the JITT. Such factors were never also found to be a distractor in the application of this relatively new method in instruction. As such it strongly recommended for instruction in accounting and other related areas, at all levels of education.

#### 6. RECOMMENDATIONS

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

1. Accounting Lecturers at College of Education should formally adopt JITT strategy in order to improve students' academic achievement, mastery and retention.
2. Accounting students should be encourage to use JITT in the learning of financial accounting since it enhances academic achievement and retention.
3. Colleges of Education school libraries should be upgraded electronically to give students access to electronic data-base in order to fully utilize JITT in teaching and learning processes.

#### REFERENCES

- [1] Adeleke, M. S., Binuomote, M. O., & Adeyinka, M. S. (2013). Determinants of students' academic performance in financial accounting among senior secondary school leavers in Oyo State. *International Journal of Business and Management Invention*, 2(5), 48-59.
- [2] Agboh, C.I. (2017). Effects of computer assisted instructional techniques on students' achievement in financial accounting in college of education in south east Nigeria. *Research Journal of Finance and Accounting*, 6(20), 234-236.
- [3] Enwere, J.O. (2012). Comparative effects of using Just – in – Time Teaching and conventional methods of Teaching on Student's Academic achievement and retention in financial accounting. An Unpublished Master Thesis in Faculty of Education in Nnamdi Azikiwe University Awka, Anambra State.
- [4] Ezeagba, C. E. (2014). Problems in the teaching and learning of accounting as a vocational subject in Nigeria secondary schools. *International Journal of Science and Technology*, 3(2), 208-226.
- [5] Ishaq, A.M (2011). The challenges of Teaching Financial Accounting in Nigeria Secondary Schools. A case study of Gombe state. Retrieved on 18<sup>th</sup> February 2013 from [www.ssrn.com/abstract](http://www.ssrn.com/abstract)
- [6] Iwu, P.C. (2016). Integrating new technologies for improving the business education curriculum in tertiary institutions in Imo State, *Nigerian Journal of Business Education*, 3(1), 91-98.
- [7] Jimoh, A. G. (2014). Effect of cooperative learning method on academic achievement of cost accounting students in colleges of education in Ogun State. Unpublished M.Ed. Thesis. University of Nigeria.
- [8] Marrs, K.A. Blake, R. & Gavrin, A. (2013). Use of warm up exercises in just-in-time teaching: Determining students' prior knowledge and misconceptions in biology, chemistry, and physics. *Journal of College of Science Teaching*, September, 42-47.
- [9] Mazur, E. & Watkins, J. (2010). Just-in-time teaching and peer instruction. In S. P. Simkins & M. H. Maier (Eds.), *Just-in-time teaching: Across the disciplines, across the academy* (pp. 39-62). Sterling, VA: Stylus Publishing.
- [10] Novak, G. M. (2014). Just in Time Teaching. Retrieved March 10, 2017 from <http://JiTT.org>.
- [11] Obunadike, J.C. (2012). Effect of Reciprocal peer Tutoring approach and lecture method of students' acquisition of clothing and Textile competencies. *International Journal of education Research and Development* 4(1). 219-225.
- [12] Obidile, I. J. (2017). Effects of problem-based teaching method on students' academic performance and retention in Accounting in technical colleges in Anambra State. Unpublished doctoral dissertation. Nnamdi Azikiwe University, Awka.
- [13] Okolocha, C.C & Okeke, V.N. (2018). Effect of peer tutoring on academic achievement of low achievers in keyboarding in secondary schools in Anambra State. *International Journal of Scientific and International Publication*, 8(8).
- [14] Simkins, S., & Maier, M. (2014). Using just-in-time teaching techniques in the principles of economics course. *Social Science Computer Review*, 22, 444-456.
- [15] Steer, D. & McConnell, D. (2011). Starting point: Teaching entry level geoscience; concept test examples. (Online) Carlton College. Available <http://Serc.carleton.edu/introgeo/interactive/ctestexm.html> (accessed 12th July 2017).
- [16] Talatu, M. (2014). Assessment of relative effectiveness of cooperative learning and problem-solving strategies on students' performance in business studies Kaduna State. Thesis submitted to Department of Vocational Education, Ahmadu Bello University, Zaria
- [17] Umar, R.T. (2017). Comparative study of direct and cooperative method of teaching financial accounting in federal colleges of education, north, east, geo-0political zone, Nigeria. *KIU Journal of Social Science*, 3(1), 257-262