



## EFFECTS OF JIGSAW II AND STUDENTS' TEAM-ACHIEVEMENT DIVISION ON PERFORMANCE IN SECONDARY SCHOOLS ECONOMICS IN ILORIN WEST LOCAL GOVERNMENT, NIGERIA

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**ABSTRACT:** *The knowledge of Economics plays a vital role in fostering societal development. In spite of its importance, few of the students who took Senior Secondary Certificate Examinations consistently have grade C and above each year. This performance has been traced majorly to the use of teacher centered strategies. This study aimed at determining the effects of Jigsaw II and Students' Team-Achievement Division (STAD) on Performance in Secondary Schools Economics in Ilorin West LGA. The objectives were to: (i) investigate academic performance of students in Economics (ii) examine the effect of Jigsaw II instructional strategy in teaching Economics (iii) examine the effect of STAD in teaching Economics (iv) determine the effects of treatments Jigsaw II and STAD instructional strategies, and (v) ascertain if there was an interaction effect of gender and treatments on students' performance in Economics in Ilorin West LGA, Nigeria. The design adopted for the study was a pre-test post-test, control group quasi-experimental design. The population of the study was all public senior secondary schools in Ilorin West LGA while the target population was students offering Economics. Using the simple random technique, three schools in Ilorin West LGA were drawn after which SSS II students were purposely sampled for the experiment. The instrument for the study was an Economics Performance Test which was face and content validated through expert judgment. Its reliability was determined using parallel forms reliability statistics with a reliability coefficient of 0.82. Research questions were analysed using descriptive statistics of mean ( $\bar{x}$ ) and skewness while the hypotheses were tested using ANCOVA statistics at 0.05 level of significance. The study concluded that STAD is effective for improving students' academic performance in Economics. This implies that learner-centered strategy can complement other strategies to enhance teaching-learning effectiveness in Economics. The study therefore recommended that teachers should use STAD and Jigsaw II in teaching Economics, authors should make for more learner centered activities in Economics textbooks while school administrators should map-out incentives as well as recognition for teachers who go beyond the traditional method of teaching in implementing the secondary school Economics curriculum, among others.*

**KEYWORDS:** Jigsaw II Instructional Strategy, Student's Team-Achievement Division (STAD), Conventional Instructional Strategy.



## INTRODUCTION

Education is a process by which the knowingsness, skills, tenets and principles of a society are transmitted from one generation to another through an unambiguous method of teaching. Therefore, teaching and learning at different stages of education is to convey an essential and permanent change in the behavior of learners. Efforts have been made to study teaching and improve it in order to make it realize subject centered learning objectives. Teaching involves setting appropriate learning expectations for students, and for that purpose, includes selection and sequencing of activities or kinds of interactions that would lead to expected learning. Learning was described as a process of active engagement, while taking care of learner differences. In this vein, to expedite the method of knowledge transmission, teachers are meant to use a proper teaching methodology relative to the definite objectives and level of outcomes. Teachers are saddled with the responsibility of facilitating learning to effectively impact knowledge in Economics like every other subject as the gap between teaching and learning must necessarily be connected. Ayeni (2011) expressed teaching to be a means of initiating a meaningful change in learners, which may result in changes in learners' behavior to accomplish an unambiguous result. Equally, Ganyaupfu (2013) illustrated that it is very imperative for teachers to be familiar with diverse teaching ways and means which can be used to accommodate the nature of concepts to be taught, if teaching is to be productive. FRN (2014) emphasized the significance of Economics as a subject; it is an ingredient that can stimulate development in any given society. This act has prompted the incorporation of Economics into school curriculum most especially at senior level. However, this stance is well supported in the last edition of National Policy on Education. In this document, it was presented that Senior Secondary Education must be accorded with entrepreneurial skills for self-sufficiency and societal growth.

In the traditional epoch, many teaching practitioners widely applied teacher-centered methods to impact knowledge to the learners, compared to student-centered method. Studies that focus majorly on teaching and learning have suggested that diverse teaching approaches must be considered to stimulate a better learning outcome among learner (Hightower, Delgado, Lloyd, Wittenstein, Sellers & Swanson, 2011). Slavin (2011) discussed that methods of teaching have shifted from an approach which is more focused on teachers to a modern system that is centered on learners. In respect to this, academic investigation has been set forth by different scholars to appraise the imperative role of cooperative learning. Cooperative learning is known to be more of mutual learning approach which is under the purview of the student and it is different from the regular teaching method. It has been reiterated that cooperative learning is good for students because in most situations, it affects the academic outcome of learners positively (Tran & Lewis, 2012).

Similarly, Johnson and Stanne (2000) pointed out that a teaching method provides a framework for interaction among three variables (teacher, the learner and the subject matter). With the mixture of these three elements, such methods will assist the teacher to harness resources for producing certain learning experiences that lead to the attainment/achievement of set objectives in the long-run. The selection and proper usage of the appropriate and most effective method(s) is very crucial to the success of a lesson because a teaching method determines whether a teacher is communicating with his students or not, and consequently the extent and depth to which the lesson objectives would be achieved. The purpose of teaching and learning Economics in the classroom is to help students master the vital principles for understanding financial problems, economic issues and policy alternatives, and consequently apply the



economic perspective accurately and empirically (Khadka, 2016). This promotes a lasting student interest in Economics and the economy (McConnell, Brue, & Flynn, 2009)

There have been concerted efforts by various researchers such as Alabi (2004) and Igueakporo (2005) at getting learners more actively involved in the learning process. This noble gesture has caused the researchers to come up with different and innovative methods of teaching, such as collaborative learning. This method boosts mental capacities and also increases participation in the class. Previous academic works have reiterated that students learn better when they are permitted to take part in the teaching-learning process. According to Hernandez (2002), cooperative learning is a multifaceted process which is developed to expedite functional learning and also advance critical thinking. Similarly, Teacher-Vision (2007) gave explanation and insight about cooperative learning. It is regarded as a teaching method that involves a small group of students working together on a common task. This instructional method is an excellent way to allow students think critically without relying on the teacher for answers. Every associate of the group must learn at the same time, thus producing an atmosphere of selflessness and excellence. Therefore, teaching activities, should involve both the students and the teacher.

Teaching activities that tend to place teachers' activities above students' activities in the course of instructional delivery are recognized as teacher-centered techniques. A good example of this technique is the lecture method widely used in secondary and tertiary institutions of learning, and it is often referred to as traditional or conventional instructional teaching technique. Conversely, teaching activities that promote and allow active students participation and engagement in classroom activities are preferably called student-centered instructional techniques. Oludipe and Oludipe (2010), Anyanwu and Iwuamadi (2015), and Idogho (2016) all submitted that the Nigerian classroom is highly teacher-centered. This type of method creates passive audience among students because during lesson the teachers does the writing and chatting and the student is just expected to take note and write what the teachers is teaching. This method is considered to be less innovative because the teacher is the sole supplier of the teaching instruction; it has been disparaged as a one directional learning style that does not make students a point of attention.

It must be expressed that a productive learning is a sole function of teacher's activities in the classroom. Teaching method is very essential because it is a prerequisite for academic excellence. It should be recognized that the strategy used by the teachers account for the outcome of their teaching. In a research conducted by Adu, Ojelabi and Hammed (2009) on the achievement of economic students for a duration of 9 years (1996-2005), it was revealed that 26.2% of the students had grade A-C and 31.6% had between pass (P7-P8) while 41.9% failed. Adu, Ojelabi and Hammed (2009) also reviewed the results of 10 selected schools considering their WAEC May/June result between the year 2006 and 2015 and found that the academic outcome of Economics candidates was not encouraging as 36.6% of the students had grade A-C (1-6), 43.5% had between pass (7-8) and 18.7% failed. This report could be corroborated by the examiner's report obtained from both WAEC and NECO for academic outcome of Economics candidates between 2016 and 2021.



## **Problem Statement/Justification**

A cross-sectional review of the performance of students in WAEC and NECO in Economics from 2011 to 2017, as shown in the preceding table, reveals that about 50% of the students had A1 to C6. However, to change the narratives of the remaining 50% who failed the subject calls for urgent attention as no student should lack the rudimentary knowledge useful for day-to-day economic dealing in the 21st century. Various reasons have been attributed to students' failure, such as poor teaching style, inappropriate teaching techniques that are not impactful and lauding the teacher-centered teaching style over the student-centered cooperating teaching techniques (Economics Network, 2009; Gamson, 2010). FRN (2013) noted that Economics is a prerequisite concept that every student must be taught, and this must be taught with lively and effective teaching tools. However, it has been observed that the conventional teaching style is the strategy heavily used/adopted by teachers in schools, and this has not helped the learners to acquire the process skills as stipulated in the curriculum. This has therefore necessitated the adoption of new strategies to facilitate learning. Therefore, this study was directed at examining the effectiveness of Jigsaw II and Students Teams-Achievement Division instructional practices on the performance Economics students. In this vein, the effect of gender as a moderating variable was also examined and this was the lacuna this study set out to fill. The following research questions were answered in this study:

1. What is the academic performance of Economic students in Economics in Ilorin West LGA, Kwara State, Nigeria?
2. What is the effect of Jigsaw II instructional strategy on secondary school students' performance in Economics in Ilorin West LGA, Kwara State, Nigeria?
3. What is the effect of Students Team-Achievement Division instructional strategy on secondary school students' performance in Economics in Ilorin West LGA, Kwara State, Nigeria?
4. What are the effects of Jigsaw II and Students Team-Achievement Division instructional strategies on secondary school students' performance in Economics in Ilorin West LGA, Kwara State, Nigeria?
5. What is the interaction effect of gender on treatment (Jigsaw II and Students' Team-Achievement Division on secondary school students' performance in Economics in Ilorin West LGA, Nigeria?

All the research questions were translated into research hypotheses and tested at 0.05 level of significance.

## **Objective(s) of the Study**

The core purpose of this research is to investigate the effectiveness of Jigsaw II and Students Team-Achievement Division on secondary school students' performance in Economics in Ilorin West LGA, Nigeria. Explicitly, this research investigates

- a. the academic performance of Economics students;
- b. the effect of Jigsaw II instructional strategies on the performance of economics students



- c. the effect of Students Teams-Achievement Division instructional strategies on secondary school students' performance in Economics in Ilorin West LGA, Kwara State, Nigeria;
- d. the effects of Jigsaw II and Students Team-Achievement Division instructional strategies on secondary school students' performance in Economics in Ilorin West LGA, Kwara State, Nigeria; and
- e. the interaction effect of gender on treatment (Jigsaw II and Students' Team-Achievement Division) on secondary school students' performance in Economics in Ilorin West LGA, Kwara State, Nigeria.

## LITERATURE REVIEW

Economics is very important because it is a subject that stimulates growth in all ramifications in the society. Presently, Economics is being taught in every secondary school especially at senior level; this act has been considered as an effective instrument to achieve the educational aims and intentions of the country. Furthermore, Economics is a social science subject that deals with the study of human behaviour and the study of scarcity of resources because the resources to satisfy unlimited human wants and needs are limited in supply; hence, there is the need for choice making and prudent resolution. In this present age, Economics has become an important subject to study in secondary schools and no student should lack the rudimentary knowledge of it by any reason because this will help them in day-to-day economic dealings. Dutuma (2014) revealed that Economics prepares one to deal with issues in a variety of fields including business, law, politics, history and accounting. It helps to understand how society affects purchasing decisions; it helps in a civil service office. It also helps to prepare for the future that affects career prospects, investment decisions and retirement strategies.

Furthermore, Yusuf (2010) opined that Economics is a concept that focuses majorly on how people in the society make a sane and decent resolution regarding what they make financially in relation to living, and also how to make a decision between options to gratify their limitless wants. The researcher further illustrated that the subject focus on the culture of production which is geared at gratifying human wants. With the assertion it may be concluded that Economics more of human disposition. Economics is considered a discipline that covers the scope of humankind under the fields of study. Also, in the last updated National policy of education, Economics is scheduled to be taught after basic classes.

Teachers are saddled with the responsibility of facilitating learning to effectively impact knowledge in Economics like every other subject as the gap between teaching and learning must necessarily be connected. Teaching is a means of initiating meaningful changes in learners which may result to changes in the learners' behavior to accomplish an unambiguous result. Ganyaupfu (2013) equally illustrated that it is very imperative for teachers to be familiar with diverse teaching ways and means which can be used to accommodate the nature of the concepts to be taught, if teaching is to be productive. Federal Republic of Nigeria (FRN, 2013) emphasized the significance of Economics as a subject: it is an ingredient that can stimulate development in any given society. This act has prompted the incorporation of Economics to school curriculum most especially at the senior level. However, this stance is well supported in the last edition of National Policy on Education. In this document, it was presented that





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There have been concerted efforts by various researchers such as Alabi (2004) and Igueakporo (2005) at getting learners more actively involved in the learning process. This noble gesture has caused the researchers to come up with different innovative methods of teaching, such as collaborative learning. This method boasts mental capacities and increase participatory in the class. Previous academic work has reiterated that students learn better when they are permitted to take part in the teaching-learning process. According to Hernandez (2002), express cooperative learning to be a multifaceted process which is developed to expedite functional learning and also advance critical thinking. Similarly, Teacher-Vision (2007) gave explanation and insight about cooperative learning: it is regarded as teaching means that involves small groups of students working together on a common task. This instructional method is an excellent way to allow students think critically without relying on the teacher for answers. Every associate of the group must learn; at the same time, he/she must ensure every associate of his/her group must also learn, thus producing a selfless and atmosphere of excellence. Therefore, teaching activities should involve both the students and the teacher.

Teaching activities that tend to place teachers' activities above students' activities in the course of instructional delivery are recognized as teacher-centered techniques. A good example of this technique is the lecture method widely used in secondary and tertiary institutions of learning, and it is often referred to as traditional or conventional instructional teaching technique. Conversely, teaching activities that promote and allow active students' participation and engagement in classroom activities are preferably called student-centered instructional techniques. Oludipe and Oludipe (2010), Anyanwu, and Iwuamadi (2015), and Idogho (2016) all submitted that the Nigerian classrooms were highly teacher centered. This type of method creates passive audience among students because during lesson the teacher does the writing and chatting, and the student is just expected to take note and write what the teacher is teaching. This method is less innovative because the teacher is the sole supplier of the teaching instruction; it has been disparaged as a one directional learning style that make students a point of attention. It must be expressed that productive learning is a sole function of teachers' activities in the classroom. Teaching method is very essential because it is a prerequisite for academic excellence. It should be recognized that the strategy used by the teachers accounts for the outcome of their teaching.



## METHODOLOGY

The design adopted for the study was a pre-test post-test, control group quasi-experimental design. The population of the study was all public senior secondary schools in Ilorin West LGA while the target population was students offering Economics. Using the simple random technique, three schools in Okene were drawn after which SSS II students were purposely sampled for the experiment as intact classes. The instrument for the study was an Economics Performance Test which was face and content validated through expert judgment. Its reliability was determined using parallel forms reliability statistics with a reliability coefficient of 0.82.

To test the hypothesis set in this research, factorial design of 3x2 was adopted. Jigsaw II and STAD were contained in the first three factorial levels while the conventional method of teaching is contained in the one control group. The second factorial level is gender occurring in either male (M) or female (F). Of course, this design allowed for the experimental group to be given treatment but the control group will not be given any treatment. Conversely, the two main groups received the pre-tests and post-tests before and after the treatment respectively.

The graphical expression of the experimental design is as shown in Table 1.

**Table 1:3x2 Pre-test; Post-test Control Groups Factorial Design on Jigsaw II and Students Teams-Achievement Division Instructional Strategies**

<i>Groups (Teaching Method)</i>	<i>Pre-test</i>	<i>Treatment</i>	<i>Moderating Variable Gender</i>	<i>Post-Test</i>
Experimental Group I (Jigsaw II)	O <sub>1</sub> X <sub>1</sub> M/F		O <sub>2</sub>	
Experimental Group II (STAD)	O <sub>1</sub> X <sub>2</sub> M/F		O <sub>2</sub>	
Control Group (CM)	O <sub>1</sub> - M/F		O <sub>2</sub>	

### Key:

- O<sub>1</sub> = Pre-test for experimental (Jigsaw II, STAD) and Control groups  
 X<sub>1</sub> = Treatment for the experimental group 1 (Jigsaw II)  
 X<sub>2</sub> = Treatment of the experimental group 2  
 - = Placebo (conventional method)  
 O<sub>2</sub> = Post-test of experimental (Jigsaw II, STAD) and Control group  
 M/F = Male and Female Students  
 ..... = Group non-randomization

Research questions were analysed using descriptive statistics of the mean ( $\bar{x}$ ) and skewness while the hypotheses were tested using ANCOVA statistics at a 0.05 level of significance.



## RESULTS

- (i) Academic performance of students in Economics was above average with  $\bar{x} = 50.68$  (Jigsaw II) and 77.14 (STAD) while skewness = -0.85 (Jigsaw II) and -0.03 (STAD);
- (ii) Jigsaw II had a significant effect on secondary school students' academic performance in Economics  $F(1, 77.75) = 0.00, p < .05$ . Students in Jigsaw II treatments performed better than their counterparts in the control group;
- (iii) STAD had a significant effect on secondary school students' academic performance in Economics  $F(1, 286.47) = 0.00, P < .05$ . Students in STAD treatments performed better than their counterparts in the control group;
- (iv) Jigsaw II and STAD had a significant effect on secondary school students' academic performance in Economics  $F(2, 172.52) = 0.00, P < .05$ , favouring students in the STAD group, making this the most effective of the experimental treatments, and there was no significant interaction effect of gender and treatments on secondary school students' academic performance in Economics.

## DISCUSSION OF FINDINGS

Outcomes from this research indicated that participants in the control group had a lower average whereas participants in the treatment groups (Jigsaw II and STAD) were above average in their academic performance in Economics. The below-average performance of the control group is in line with that of Adu, Ojelabi and Hammed (2009) corroborated by the examiner's report obtained from WAEC and NECO from 2011 to 2017. The report disclosed that students' achievement in economics was below average with less than 50% of the students having grades A-C. The below-average performance of the control group could be because of the obvious argument that Economics is an abstract subject which requires the power of deduction and abstract reasoning for its effective teaching to students (Nwigwe & Ugwu, 2017). Also, Yusuf (2010) explained that while students in these classes are within the age bracket of 13 to 16, there is a notion that the knowledge of Economics may not be successfully imparted to students before this stage (16 years). The low performance recorded could also be linked to the teachers-approach method which is considered to be a traditional/conventional teaching strategy in most Nigerian senior secondary schools (Khalil & Elkhider, 2016). The above-average performance of the experimental groups could be linked to the cooperative learning strategy employed, which is proven to benefit students' learning in many ways. For instance, cooperative learning approaches have been found to positively impact cognitive and affective outcomes, academic achievement as well as knowledge retention (Tran & Lewis, 2012).

Findings from this study revealed that Jigsaw II instructional strategy employed in experimental group 1 had a significant effect on the performance of Economics students. Students in the treatments (Jigsaw II) performed better than their colleagues in the control group; because of this, the group is responsible for the significance recorded. The outcomes of the research bared that respondents in the experimental group did better than the control group participants. Correspondingly, Sahin (2010) also disclosed that there were substantial variances among the experimental and control groups in relation to their attitudes and academic achievement. Also, it was concluded that the students in the experimental group possess the





right perception of the use of the Jigsaw technique. The Jigsaw strategy is an efficient way to learn the course materials in a cooperative listening style. This might be so as the Jigsaw process encourages listening, engagement and empathy by giving each member of the group an essential part to play in the academic activity. Group members must work together as a team to accomplish a common goal; each person depends on all others. No student can succeed completely unless everyone works well together as a team. This cooperation by design facilitates interaction among all students in the class, leading them to value each other as contributors to their common tasks. Therefore, the Jigsaw technique has been proven to encourage students' participation in a classroom where learners have a critical role in success, and this success depends on active cooperation and participation (Putnam, 2004).

STAD instructional strategy employed in experimental group 2 had a significant effect on the performance of Economics students. Students in the treatments (STAD) performed better than their colleagues in the control group and because of this, the group is responsible for the significance recorded. This finding is in line with the work of Jolliffe (2005), Wyk (2013) and Jacobs et al. (2003). The researchers stated that STAD is an effective tool to improve students' achievement.

The findings on the effects of the experimental treatments (Jigsaw II and STAD instructional methods) revealed a significant effect on the performance of Economics students. As revealed by Duncan's Post hoc test, students in experimental group 2 taught with STAD instructional strategy the group that brought about the significance, making this the most effective strategy for teaching Secondary School Economics. This finding is in line with that of Okechukwu et al. (2016) whose findings show that Think-Pair Share and STAD greatly enhanced the performance of Economics students; STAD accounted mostly for the significance. This result could be a result of STAD's suitability for teaching a well-planned concept with a lone accurate answer, like numerical calculations and scientific concepts. Nevertheless, it can effortlessly be modified for use with less well-planned aims by integrating a more open-ended evaluation, like an essay exercise. Nevertheless, it can effortlessly be modified for use with less well-planned aims by integrating more open-ended evaluations, like an essay exercise with appropriately tailored technological aid (Oladele et al., 2022). STAD method has consistently proven to be among the simplest and most effective cooperative learning methods; it is a process where tutors provide learning instruction to learners for them to learn it as a team. It also stimulates and gives room for the student to share ideas through group work, and it opens the door for group responsibility to foster individual learning. Cooperative learning strategies can motivate students and help them focus attention, organize information for understanding and remembering, and monitor and assess learning (Rai & Samsuddin, 2007).

The study found that there was no significant interaction effect of gender and treatments (Jigsaw II and STAD) on the performance of Economics students. This finding is in congruence with that of Onuka and Durowoju (2010; 2011) who reported that gender did not play any significant role in students' achievement in essay writing and business studies respectively. This might be so as gender alone cannot be used to explain how students' characteristic influences academic performance. Okechukwu et al. (2016) were however different on this finding, reporting that girls performed better compared to their male colleagues. Correspondingly, Yusuf (2004) and Alabi (2004) conveyed that collective learning has an effect on the achievement of students in cooperative and competitive instructional strategies as in terms of instructional strategies, academic ability and gender affect students' academic achievement in cooperative and competitive instructional strategies. It means that the



composition and nature of the classroom interaction patterns among students as a whole affect their academic performance with learning.

## CONCLUSION

The study concluded that STAD is effective in improving students' academic performance in Economics. This implies that a learner-centred strategy can complement other strategies to enhance teaching-learning effectiveness in Economics. The study recommended that teachers should use STAD and Jigsaw II in teaching Economics, authors should make for more learner-centred activities in Economics textbooks, while school administrators should map-out incentives as well as recognition for teachers who go beyond the traditional method of teaching in implementing the secondary school Economics curriculum, among others.

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