

**EFFECT OF JIGSAW INSTRUCTIONAL STRATEGY ON UPPER BASIC II  
STUDENTS' ACHIEVEMENT AND RETENTION IN CIVIC EDUCATION IN ABIA  
STATE**

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**Abstract**

The study investigated the effect of Jigsaw learning strategy on Upper Basic 11 Students' academic achievement and retention in Civic education. Three research questions were posed and one hypothesis was formulated to guide the study which was carried out in three schools in Umuahia Educational Zone of Abia state. The population of 33,787 comprising 17,127 male and 16,660 female students in Upper Basic II were involved. One hundred and twenty-seven (127) students were used for the study for the sample. The study is a quasi-experimental study which employed pretest posttest control group design and a 2x1 factorial design. Instruments used for data collection was Civic Education Achievement Test (CEAT), CEAT was validated by three experts and the reliability coefficient using Kuder Richardson formuler was found to be 0.87, Analysis of Covariance (ANCOVA) and t-test statistics were used to test the hypotheses at 0.05 significance level. The result revealed that there is significant difference in academic achievement of students taught Civic Education using Jigsaw learning strategy than those taught using Lecture teaching method. The result equally revealed that there is an improvement in the mean achievement and retention scores of students taught Civic Education after treatment with Jigsaw learning strategy. The result also revealed that gender is not a significant factor in the academic achievement and retention of students using Jigsaw learning Strategy. The result proved that Jigsaw learning strategy enhanced upper Basic 11 students' academic achievement and retention in Civic Education than Lecture teaching method. It was recommended among others that efforts should be made by curriculum experts to incorporate the Jigsaw learning strategy into the teaching of Civic Education.

**Key words:** Jigsaw instructional strategy, Civic education, Upper Basic, academic achievement, Retention.

## Introduction

In the realm of education, the continuous pursuit to enhance instruction and improve students' learning outcomes remains a paramount goal. Scholars and educators have dedicated substantial efforts to exploring innovative teaching strategies that foster a deeper understanding of various subjects (Eke, Ugonna, & Nwachukwu, 2021). Among the pivotal subjects, civic education holds a unique position in a well-rounded curriculum, imparting knowledge about citizenship, governance, and societal responsibilities. Civic education plays a pivotal role in shaping the civic responsibilities and obligations of students, contributing significantly to national development. Civic education serves as a foundational source of civic knowledge, providing students with essential information about their rights, duties, and the workings of the political and social systems (Ocadiz, 2018).

Through the study of civic education, students gain a comprehensive understanding of government structures, the rule of law, and the principles underlying a democratic society. This knowledge equips them to make informed decisions and actively participate in civic processes. Civic education instills core values and ethical principles essential for responsible citizenship. Students learn about concepts such as justice, equity, tolerance, and respect for diversity (Onuoha *et al.*, 2016). By internalizing these values, students develop a strong moral compass that guides their behavior in society. This ethical foundation contributes to the creation of a civic-minded generation capable of upholding principles that foster social harmony and cohesion. Civic education encourages critical thinking and analytical skills, empowering students to assess societal issues, evaluate policy choices, and engage in constructive dialogue (Obinna-Akakuru *et al.*, 2023). Through discussions on current events, case studies, and simulations, students learn to analyze complex situations, identify problems, and propose solutions. These skills are crucial for active citizenship and contribute to the development of a thoughtful and engaged citizenry. Civic education serves as a training ground for future leaders and active participants in civic life. Students are exposed to practical experiences, such as student government, community service, and civic projects, fostering a sense of responsibility and leadership (National Council for Social Studies, 2019). These experiences prepare students to take on leadership roles, contribute to community development, and actively participate in the democratic process. Through civic education, students develop a sense of civic duty and responsibility towards their community and nation. The curriculum emphasizes the importance of contributing to the common good and working towards the betterment of society (Ocadiz, 2018). This sense of duty motivates students to engage in activities that promote social welfare, environmental sustainability, and community development.

Civic education enhances students' political literacy by providing insights into the political landscape, electoral processes, and the role of citizens in shaping government policies (Eke, 2018). This knowledge empowers students to make informed decisions during elections, advocate for their interests, and actively participate in democratic processes. Civic education plays a crucial role in advancing students' civic responsibilities and obligations for national development. By cultivating knowledge, values, skills, and a sense of civic duty. Civic education contributes to the formation of an enlightened, engaged, and responsible citizenry. This, in turn, has far-reaching implications for the overall progress and development of the nation.

Despite the significance of civic education, the performance of students in the Basic Education Certificate Examination (BECE) in Abia State has been witnessing a steady decline from 41% in 2019 to 36% in 2022 (Basic Education Certificate Examination Abia State Committee, 2022).

This downward trend may be attributed, in part, to the conventional lecture-based teaching method commonly employed in upper elementary schools, which may have resulted in low learning retention on the part of students.

The lecture method, characterized by the teacher's comprehensive verbal instruction or exposition, has been a longstanding teaching approach. Often involving formal organization and support from learning media, this teacher-centered method has been commonly employed, particularly for handling large classes. However, a growing body of research highlights its limitations, especially in fostering students' innovativeness, critical thinking, inquiry, and scientific attitudes (Egbai & Eke, 2022). While the lecture method may prove efficient for knowledge dissemination, its drawbacks become evident when considering the needs of students at lower levels of education. Instead of encouraging active engagement and independent thinking, this approach tends to promote rote memorization, leading to limited knowledge retention and superficial learning (Eke, 2018). Furthermore, its emphasis is on teaching rather than facilitating learning for mastery, which undermines the cultivation of essential lifelong learning skills. In a traditional lecture setting, students often adopt a passive role, merely absorbing information without actively processing or internalizing the content. This passive learning style can hinder their ability to develop critical thinking and problem-solving skills. The lecture method tends to limit meaningful interaction between the teacher and students, as well as among students themselves. Such interactions play a crucial role in promoting a deeper understanding of the subject matter and fostering a sense of collaboration and community within the classroom.

To reverse this trend and achieve the desired outcomes, there is an imperative need for civic education teachers to adopt innovative active teaching and learning strategies (Zhang, Olelewe, & Okanazu, 2022). Active learning strategies that have inbuilt instructional procedures such as group discussions, problem-solving activities, and hands-on projects empower students to take ownership of their learning process. By engaging in meaningful activities, students develop a deeper understanding of the subject matter and acquire essential analytical and problem-solving skills. In this context, jigsaw learning strategy stands as promising instructional and learning strategy that can enhance the effectiveness of Civic education instruction and learning retention in students.

By embracing active learning strategies, technology-enhanced learning, and student-centered pedagogies like Jigsaw learning instructional strategy, educators can create dynamic and inclusive learning environments that foster students' innate curiosity and passion for knowledge and learning retention (Egbai & Eke, 2022). Learners can be better prepared for the challenges of the 21st century as active learning instructional strategies are used in lesson delivery. This will equip students with the skills and mindset required to thrive in an ever-changing world. The adoption of effective instructional strategies plays a crucial role in transforming traditional teaching methods and enhancing students' academic achievement and engagement. Jigsaw learning strategy is rooted in the constructivist approach to learning, emphasizing active participation, critical thinking, and knowledge integration (Chawla & Singh, 2015). This innovative learning strategy holds immense potential for civic education by promoting a deeper understanding of complex concepts, fostering collaborative learning environments, and fostering students' learning retention.

The Jigsaw teaching strategy is rooted in the constructivist approach to learning, aligning with cooperative principles advocated by constructivist theorists. The fundamental tenet of constructivism posits that knowledge is not merely transmitted but actively constructed by the learner through engagement with their surroundings, interactions with others, and the integration of new concepts with existing knowledge. This dynamic process involves experiential learning, reflective practices, and the active construction of knowledge by the learner (Izuagba, Afurobi, Ifegbo, 2014; Eke, 2018). When implementing the Jigsaw instructional strategy within a classroom setting, students are organized into small groups, and a key feature involves members being systematically shuffled among these groups. This intentional interdependence among groups is designed to foster collaborative learning. Each group becomes reliant on others to contribute essential information necessary for understanding a specific topic or completing a given task. The essence of the Jigsaw strategy lies in the interconnectedness of these groups, emphasizing collective knowledge construction rather than individual learning silos.

Research by Izuagba, Afurobi, and Ifegbo (2014); Eke (2018) highlight the efficacy of the jigsaw strategy in promoting various educational outcomes. The strategy has been associated with enhanced retention of learning, cultivating positive attitudes towards the learning process, and fostering the development of crucial interpersonal skills. Furthermore, empirical evidence suggests that the Jigsaw strategy contributes to increased academic achievement among students. Jigsaw teaching strategy, grounded in constructivist principles, presents a collaborative and interactive approach to learning. Through intentional group dynamics and interdependence, it not only facilitates knowledge construction but also contributes to a positive learning environment, interpersonal skill development, and improved academic achievement (Izuagba, Afurobi, & Ifegbo, 2014; Eke, 2018).

To optimize the effectiveness of jigsaw learning strategy, it is essential to consider factors that may influence students' learning experiences, like academic achievement, learning retention, and gender. Academic achievement encompasses a wide array of performance measures, reflecting the success of individuals in meeting specific educational goals. The knowledge gained through instruction and the processes of learning are integral components of academic achievement. It encompasses a range of indicators such as standardized test scores, grades, and overall academic proficiency, which collectively reflect a person's accomplishments in educational settings, notably in schools, colleges, and universities. This achievement signifies the degree to which individuals have successfully attained specific learning objectives that formed the basis of their instructional experiences (Asubiojo, 2018). Moreover, it serves as a measure of the knowledge and expertise acquired through learning. The process of gaining knowledge is intricately tied to the instructional methods employed within educational institutions. Learners receive guidance from teachers who design a curriculum around fundamental activities. These activities involve assigning tasks to students, evaluating their performance, and making comparisons to assess the quality of their work. The outcome of these activities, in terms of the students' academic performance, is what ultimately constitutes their academic achievement. High academic achievement cannot be said to be actualized by the students without them having retained the learned knowledge. Additionally, external factors, such as gender, can impact a student's academic performance.

Learning retention is defined as the measure of information retained by an individual after being exposed to specific information and the ability of the individual to recall such information in a specific interval of time (Bruno, Ongaro, & Fraser, 2017). According to Ferr (2018), retention of learned material is the ability of the students to comprehend the acquired knowledge of a particular subject. They further say that retention is exhibited by the learners through successful

performance in the tests organized to measure their achievement. It is the ability of students to remember and recall information over time. It is a critical aspect of the learning process because it determines how well students retain the knowledge and skills they have acquired during instruction and the extent to which students can recall and apply the knowledge acquired during their learning experiences (Kyado, Achor, & Manasseh, 2020). In the context of teaching civic education, ensuring long-term retention is paramount, as this subject not only imparts factual information but also nurtures students' critical thinking, problem-solving, and citizenship skills. To optimize learning retention in civic education, educators are increasingly turning to innovative learning strategies (Egbai & Eke, 2022), such as jigsaw learning strategy that align with constructivist approaches to learning. However, academic achievement and learning are not solely determined by the educational process itself; external factors can also exert influence. One such factor is gender. Research has shown that gender can play a role in shaping academic outcomes and learning retention, with varying levels of achievement observed between male and female students (Okeke, 2018). Consequently, it is essential to consider this external element when evaluating academic achievement and learning retention.

Gender refers to the social and cultural roles associated with each sex within a specific society. Unlike sex differences, which are determined by genetics, gender roles are often shaped by environmental factors such as family interactions, media, peers, and education. In the context of education, gender is considered a variable that may influence students' academic achievement. The topic of gender has garnered significant attention from experts and the general public in recent times. Eke (2018) conducted a study that revealed no significant differences in the reading comprehension performance of male and female students when exposed to the jigsaw teaching strategy. Similarly, Agwamba (2014) found that male and female students achieved at an equal rate when taught English language grammar using scaffolding and direct instruction. However, Edinyang and Ubi (2013) reported contrasting findings, suggesting that girls outperformed boys in literary texts, while boys exhibited higher academic performance than girls in numeracy. Considering these inconsistent findings, this research aimed to contribute to resolving the controversy surrounding gender's impact on academic achievement, particularly in the context of civic education. In the cultural setting of Umuahia Education Zone, there exists a tacit assumption that males are superior to females in all aspects (Eke, 2018). To investigate further, this study examined whether the use of jigsaw instructional strategy, which challenges learners in a mixed-group ability class to work cooperatively to link abstract concepts to experiential conceptions, may be influenced by socio-cultural factors that expose males and females to different problem-solving situations and social positions.

These driving forces serve as motivation for this study, as it seeks to shed light on the relationship between gender, instructional strategies, and academic achievement in the context of civic education. By exploring how the educational experiences of male and female students differ and how these experiences might influence their learning outcomes, this research aimed to contribute valuable insights to the ongoing discourse on gender and academic achievement.

## Research Questions

1. The following research questions are stated for the study:.
1. What is the mean achievement scores of upper basic II students in civic education taught using jigsaw, and lecture methods?
2. What are the mean retention scores of upper basic II students in civic education taught using jigsaw, and lecture methods?

3. What are the mean achievement scores of male and female upper basic II students in civic education taught using the Jigsaw instructional strategy?

## HYPOTHESES

This null hypothesis was formulated to guide the study and will be tested at the 0.05 level of significance.

There is no significant difference between the mean achievement scores of upper basic II students in civic education taught using jigsaw, and lecturer methods.

## Method

This study adopted pre-test, post-test, control group experimental design with a 2 x 2 factorial matrix to determine the effects of training in jigsaw learning strategy and lecture method on students' academic achievement and retention in Civic education. The experimental group adopted jigsaw instructional strategy and the control group used the lecture method for teaching. The population of the study comprised all the Upper Basic II students of Civic education in all the Government owned co-educational Secondary schools in Abia State in the 2021/2022 academic session numbering 33787 students (17127 male and 16660 female students) in Abia State. (Abia State Secondary Education Management Board, 2023).

The Upper Basic Students of Government Technical College, Afaraukwu was purposively sampled. Government Technical College is one of the coeducational public secondary schools in Umuahia Educational Zone. The sample of the study consist of 127 students comprising 53 males and 74 females. 41 students were assigned to the experimental groups and 42 students assigned to the control group . The class for experimental group has 14 males and 27 females while the other class for control group has 20 males and 22 females. Civic education Achievement Test (CEAT) which consist of 40 multiple-choice questions along with two types of lesson plans were used for data collection. One for the experimental group using jigsaw learning instructional strategy and the other for control group using Traditional method of teaching strategy. The Pre-test Post- test achievements test items were based on the unit topics that consist of topics in Civic education that was taught to the students.

The face and content validity were established for the Civic education Achievement Test (CEAT) Forms 1 and 11. To ensure the face validity of the CEAT, they were presented to two specialists in Measurement and Evaluation and Curriculum and instruction from Michael Okpara University of Agriculture, and a senior Civic education teacher. The Civic Education Achievement Test (CEAT) forms 1 and 11 were ensured through the use of the test blue prints and item analysis. Thereafter, the test items generated were sent to experts in Curriculum Studies and Measurement and Evaluation from Michael Okpara University of Agriculture, Umudike for comments and suggestions. The researcher in collaboration with some Upper Basic II Civic education teachers developed a 40 item multiple-choice achievement test that was based on the topics to be taught on Civic education, 15 questions out of the 40 multiple choice questions items were of low level cognitive domain while the other 25 questions were based on high level cognitive domain. The 25 questions covered application, analysis, synthesis and evaluation levels; which are of the high level cognitive skills.

The reliability of the Civic Education Achievement Test (CEAT) was 0.87. The instrument was subjected to trial testing. The Civic education Achievement Test (CEAT) instrument was administered to 30 students who were not sampled for the study. The scores obtained from the trial testing were subjected to Kuder-Richardson (KR-20) formula to determine the internal consistency of the Civic education Achievement Test. The Kuder-Richardson (KR-20) was appropriate for determining the reliability of the Civic Education Achievement Test because the instrument required only one correct answer in every case. The conduct of the study took place during the normal Civic education lesson periods.

**Table 4.1 Pre test – Post test Mean achievement score and standard deviation of upper Basic II students in Civic education taught using jigsaw, and lecture method**

		<b>Pre test</b>	<b>Post test</b>	<b>Mean gain/loss</b>
Jigsaw	Mean	18.78	34.93	16.15
	N	41	41	
	Std deviation	3.87	4.12	
	N	44	44	
Lecture method	Std deviation	4.03	4.13	
	Mean	17.19	22.13	4.94
	N	42	42	
	Std deviation	5.13	5.88	

Data in Table 4.1 showed the mean achievement score and standard deviation of upper Basic II students in civic education taught using jigsaw, and lecture methods.

From the data, one can see that the students in the jigsaw group had a pretest mean score of 18.78 and a standard deviation of 3.87 in their Civic education achievement test, while their post-test means on Civic education achievement score were 34.93 with a standard deviation of 4.12, giving a mean pre-test/post-test gain score of 16.15. The students exposed to the lecture method had a pretest mean on the civic education achievement score of 17.19 with a standard deviation of 5.13, while their post-test mean score was 22.43 with a standard deviation of 5.88, giving a pre-test/post-test mean gain score of 4.94. The result showed that students exposed to jigsaw had a higher mean achievement gain score more than those taught with lecture method.

A corresponding hypothesis formulated to further address the research question is:

**Table 4.2 Analysis of covariance on the mean achievement score of upper Basic II students in Civic education taught using jigsaw, and lecture method.**

Source of variation	Type III sum of square	Df	Mean square	F	Sig	Decision
Corrected model	323653.096	2	161826.548	1136.803	.000	
Intercept	22585.778	1	11292.889	39.665	.120	Reject Ho
Pre-test	2999.034	1	2999.034	10.534	.643	
Group	103.057	2	51.529	.090	.000	
Error	34449.272	124	277.816			
Total	395836.000	127				
Corrected total	60555.969	126				

Table 4.2 shows a F-value of .090 at df (2, 124) where  $P < 0.05$ . The F-value of .090 shows that there is a significant difference in the mean achievement score of upper Basic II students in civic education taught using jigsaws and lecture methods. Thus, the null hypothesis, which states that there is no significant difference between the mean achievement scores of upper Basic II students in civic education taught using jigsaw, and lecturer methods, is therefore rejected.

### Research Question 2

What are the mean retention scores of upper Basic II students in Civic education taught using Jigsaw, and lecture methods?

**Table 4.5: Pretest/Post-Test mean achievement score of male and female upper basic II students in Civic education taught using jigsaw instructional strategy**

Gender of subjects		Pre-test	Post-test	Mean gain /loss
Males	Mean	9.35	.36.00	15.71
	N	19	19	
	SD	4.28	3.32	
Females	Mean	19.04	34.37	15.33
	N	25	25	
	SD	3.70	4.47	



Data in Table 4.5 showed the mean achievement scores in civic education and the standard deviation of male and female students exposed to jigsaw instructional strategies. From the data, one can see that the male students in the jigsaw instructional strategy had a pretest mean score of 18.29 and a standard deviation of 4.28 in their achievement scores in civic education, while their post-test mean achievement score in civic education was 36.00 with a standard deviation of 3.32, giving males a mean pre-test/post-test gain score of 15.71. Female students exposed to jigsaw instructional strategies had a pretest mean achievement score in civic education of 19.04 with a standard deviation of 3.70, while their post-test mean score was 34.37 with a standard deviation of 4.47, giving a pre-test/posttest mean gain score of 15.33. The male students exposed to the jigsaw instructional method had a higher mean gain score than their female counterparts.

**Table 4.3 Post test – Retention score of upper Basic II students in Civic education taught using jigsaw, and lecture method at retention period.**

		Post test	Retention	Mean gain/loss
Jigsaw	Mean	34.93	38.29	3.55
	N	41	41	
	Std deviation	4.12	5.32	
Lecture method	Mean	22.43	23.38	0.95
	N	42	42	
	Std deviation	5.13	5.92	

Data in Table 4.3 showed the mean achievement score and standard deviation of upper Basic II students in civic education taught using jigsaw, and lecture methods.

From the data, one can see that the students in the jigsaw group had a posttest mean score of 34.93 and a standard deviation of 4.12 in their civic education, while their retention mean score was 35.29 with a standard deviation of 3.70, giving a mean post-test/retention-test gain score of 3.55. The students exposed to the lecture method had a posttest mean in civic education achievement score of 22.43 with a standard deviation of 5.13, while their retention-test mean score was 23.38 with a standard deviation of 5.38, giving a mean post-test/retention-test score of 0.95.

The experimental group exposed to jigsaw had a higher achievement score than those taught with lecture method.

**H<sub>01</sub>:** There is no significant difference between the mean achievement scores of upper Basic II students in Civic education taught using Jigsaw, and lecture methods

## **Discussion of Finding**

The findings of this study revealed that there is a mean achievement score difference between those taught civic education using jigsaw, and lecture methods at the post-test. The findings of Orji (2021) are based on the findings of this study. Orji discovered that the jigsaw can increase the mean achievement score in Civic education. Civic education is a subject that empowers individuals to engage in advocacy and volunteerism, contributing to the social, economic, and political growth of organizations that play a vital role in national development. Jigsaw instructional strategy has proven to increase mean achievement because it is a collaborative learning strategy that brings to light diverse views from members of expert groups. The need to stand up as an individual to tutor members of one's group enables students to go the extra mile in comprehending what a given concept is all about with the aid of teaching materials gotten from the teacher. Hence, jigsaw is proven in this study to increase achievement. The corresponding hypotheses tested showed that there is a significant difference in the mean achievement score between those taught civic education using jigsaw, guided discovery, and lecture methods at the post-test. The findings of Shaaban (2017), who investigated the effects of the jigsaw cooperative learning (CL) model and whole class instruction in improving learners' reading comprehension, vocabulary acquisition, and motivation to read among high school students in Gaza, are in line with the findings of this study. She found out that jigsaw teaching strategies were not significant in improving learners' reading comprehension, vocabulary acquisition, and motivation to read among high school students in Gaza.

The findings of this study reveal that a mean difference exists between those taught with jigsaw and the lecture method.

The corresponding hypothesis revealed that there is a significant difference among the mean retention scores of upper Basic II students in civic education taught using jigsaw, and lecture methods. The findings of this study showed that teaching strategies had a significant effect on students' retention. The effectiveness of jigsaw, and lecture methods helped learning retention by transferring new information into long-term memory and being able to recall or apply the knowledge whenever it was needed. Learning retention influences the effectiveness of instructional strategies and shapes long-term knowledge acquisition.

## **Mean achievement scores of male and female upper Basic II students in Civic education taught using Jigsaw instructional strategy**

The findings of the study revealed a slight mean difference in achievement scores between male and female upper Basic II students in civic education taught using a jigsaw instructional strategy. The males had a higher mean gain than their female counterparts. The corresponding hypotheses tested revealed that a significant difference exists between the mean achievement scores of male and female upper Basic II students in civic education taught using a jigsaw instructional strategy. The finding of Ogunyemi (2021) is in agreement with the finding of this study that gender difference does affect academic achievement in boys and girls. They asserted that the learning environment, including teaching methods (jigsaw instructional strategy) and classroom dynamics, can affect how boys and girls engage with academic material. Varied learning styles and preferences may contribute to divergent academic outcomes. This is true because males had a higher mean gain at the posttest than females when taught civic education with a jigsaw instructional strategy.

## **Mean Retention scores of male and female upper Basic II students in Civic education taught using Jigsaw instructional strategy**

The finding of the study revealed a slight mean difference in retention achievement scores of male and female upper Basic II students in Civic education taught using Jigsaw instructional strategy, where females had higher mean gain than their male counterparts. The corresponding hypotheses tested revealed that no significant difference exist between the mean retention scores of male and female upper Basic II students in Civic education taught using Jigsaw instructional strategy. The finding of this study is in negation with the study done by Ghaith and Bouzeineddine (2019) using jigsaw instruction strategy to promote reading attitude and reading achievement, they discovered in that gender had no significant effect on achievement. The fact that one is a male or female was not a factor that accounts for one's achievement nowadays. Both male and female upper Basic student achieved similar score at post-test.

## Conclusion

This study was carried out to investigate the effect of jigsaw instructional strategy on Upper Basic II students' achievement and retention in Civic education in Abia State.

The result of the study shows that students exposed to jigsaw instructional strategy had higher mean academic achievement score gain than their peers exposed to lecture method of teaching. That is to say that jigsaw enhances students' academic achievement. Also, students exposed to jigsaw had high retention mean score than students taught using lecture method of teaching. This implies that jigsaw enhances students' academic achievement and retention in Civic education.

## Recommendations of the Study

1. The curriculum planners should plan the nation's civic education curriculum to accommodate jigsaw instructional strategy for the students and should allot more time to enable the application of these learning strategy
2. Future researchers should use the result of this study to investigate methods through which school administrators and teachers can effectively develop inquiry-based approaches to teaching in order to improve academic performance in public secondary schools.
3. Male and female students should be exposed to jigsaw instructional strategy without discrimination, since evidence shows that the use of the strategy significantly improved their achievement and self-concept in civic education.
4. Jigsaw strategy should be used as yard sticks for teachers promotion to the next level. If no serious reinforcement is tagged to the use of these innovative teaching strategies like jigsaw strategy, teachers may continue to use lecture methods in their lesson delivery.
5. Training of trainers (TOT) on innovative learning strategies should be done during the holiday period so that the teachers can plan their lessons to accommodate jigsaw learning strategy before teaching commerce at the resumption of school.

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