

Novel Style Instruction: Effects of Think-Pair-Share Style Instruction on Political Science Education Students' Learned Outcomes

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Abstract

The study examined the effects of the Think-Pair-Share (TPS) style instruction on the learned outcome of Political Science Education students at Delta State University, Nigeria. Given the growing need for student-centred pedagogy in higher education, the research investigated whether TPS could enhance conceptual understanding better than conventional lecture methods. The research followed a quasi-experimental protocol, a 2x2 factorial design. For this study, researchers used multi-stage and purposive sampling to pick one hundred and sixty-six students across four grade levels. The "Students' Learned Outcome Test" (SLOT) was used to gather data. The instrument's content and face validity have been established. It was based on three expert views and a specification table. To ensure internal consistency, the instrument was pilot-tested, yielding a computed Kuder-Richardson Formula 21 (KR-21) dependability reliability coefficient of 0.70, which confirmed its suitability for field administration. The study's research questions were analysed with average statistics. Hypothesis testing was conducted using ANCOVA at a significance level of 0.05. The analysis of data showed a substantial effect of TPS-style instruction on Political Science Education students learned outcome; no substantial gender effect on Political Science Education students learned outcome for male and female students tutored with the TPS-style instruction. According to the results, it was suggested that the TPS-style instruction should be used as one of the style instructions for teaching Political Science Education; instructors of Political Science Education should obtain government training on the implementation of innovative pedagogical methods in classroom environments and male and female students should have equal access to educational opportunities when using the TPS-style instruction.

Keywords: Learned Outcome, Novel Style Instruction, Political Science Education, Style instruction, Think-Pair-Share (TPS).

Introduction

Assessing students learned outcomes is an essential part of school processes. It is the product of a student's learned outcomes, as examinations or continuous assessments commonly measure it. Improving students' behaviour is the goal of education. Instructional styles that promote effective instruction and enhance students learned outcomes differentiate between appropriate and inappropriate instruction (1). In most universities, students take a passive role as the teacher acts as the authoritative figure and dominates the classroom during Political Science Education classes conducted in the traditional lecture format. Lecture-style instruction is teacher-centred; it does not encourage creativity and often emphasises content delivery over student

engagement (2). The TPS-style instruction provides each learner the opportunity to contemplate and respond to a teacher's question while collaborating with peers to generate potential solutions or answers. The learning process concludes with students presenting their answers, findings and solutions to the entire class (3, 4). Reviewed literature has shown the efficacy of TPS-style instruction on students learned outcomes. Past studies consistently showed that the TPS-style instructional model positively impacts student outcomes, enhancing motivation and academic achievement across various disciplines (5-9). The limitations of these studies are that the cited studies demonstrating the efficacy of TPS were heavily concentrated in

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Reading Comprehension, Basic Science and Social Studies. Since Political Science Education involves higher-order dialectical reasoning, civic arguments and abstract ideological debates, these past findings cannot be directly generalised to a specialised university Political Science curriculum. Gender refers to the classification as male or female, particularly in the context of social and cultural distinctions (10). It was presumed that girls and boys exhibited equivalent learned outcomes, as the government and society are increasingly focusing on the education of the female child to cultivate her underutilised intellectual potential and enhance her learned achievements (11-13).

Research on students' gender indicated that it influences learned outcomes; however, there is debate over whether male students outperform their female counterparts academically. Conversely, studies on gender effects have been contradictory, with evidence ranging from no significant difference to notable performance disparities (14-16). Limitations in the literature include a focus on primary education, lack of research in specialised humanities, inconclusive data on gender and a failure to account for environmental variables. These studies are also heavily fragmented. While some studies claim zero gender variance, others actively contradict each other by asserting either that males outperform females or that females outperform males. The studies attributing gender gaps to socio-cultural roles offered descriptive explanations but failed to empirically measure how local classroom environments or regional socio-cultural biases directly interact with collaborative learning structures.

A critical review of contemporary educational literature revealed a pronounced empirical gap in applying interactive pedagogical frameworks within higher education in developing sub-Saharan African contexts. While the efficacy of the TPS-style instruction model has been broadly documented, existing studies are disproportionately confined to primary or basic education levels and concentrated within the natural sciences and reading comprehension.

Finally, the literature regarding gender dynamics in interactive classrooms is deeply fractured and inconclusive. Existing studies offer highly polarised findings, alternately claiming male

dominance, female superiority, or complete gender neutrality. An urgent empirical need remains to bridge these gaps.

The overarching aim of the current study is to examine the effects of TPS-style instruction on the learning outcomes of Political Science Education students at Delta State University, Nigeria. Specifically, this study aims to examine the effect of TPS-style instruction on the learning outcomes of Political Science Education students and to determine the effect of students' gender on their learned outcomes when subjected to TPS-style instruction.

The study answered and tested the following research questions and hypotheses:

- a) Does TPS-style instruction affect the learned outcomes of Political Science Education students?
- b) Does students' gender affect Political Science Education students' learning outcomes when subjected to the TPS-style instruction?
- a) TPS-style instruction has no considerable effect on Political Science Education students learned outcomes;
- b) Students' gender has no substantial effect on Political Science Education students learned outcomes when subjected to the TPS-style instruction.

The novelty of this study lies in its targeted application and evaluation of the TPS-style instruction within the specific domain of Political Science Education. Previous literature heavily documented the benefits of TPS-style instruction in language and science disciplines, leaving a critical geographic and contextual gap regarding its efficacy in Political Science Education frameworks. This research filled that gap by providing concrete empirical data showing that TPS-style instruction yields significantly higher learning gains than traditional lecture-style instruction. Furthermore, by evaluating gender-based interactions, this study uniquely demonstrated that the academic benefits of the TPS-style instruction model are equitable across both male and female student demographics, offering a universally applicable pedagogical tool for political science educators.

By employing a quasi-experimental 2x2 factorial design across four distinct undergraduate grade levels, this research moved beyond simple descriptive overviews to isolate the exact effects of

pedagogy and gender. Furthermore, by focusing exclusively on Political Science Education students within a Nigerian university, the study provided original empirical evidence from a geographically and academically underrepresented environment.

Methodology

The study utilised a control-group design with a quasi-experimental pretest-posttest design. The factorial design was a 2 x 2 of non-randomised subjects from intact classes. The independent variable was the instructional strategies, with two levels (TPS-style instruction and lecture style). Gender (male, female) was used as a moderator variable. Gender was chosen as a moderator to assess whether the multi-layered structural framework of TPS-style instruction, particularly the low-pressure, personal atmosphere of the Think and Pair stages, could shield female Nigerian students from significant social anxieties in large groups, thereby providing a fair setting to develop and articulate their political perspectives.

A quasi-experimental non-equivalent control group design with a 2x2 factorial matrix was chosen, as it allowed for testing an instructional strategy across pre-existing classroom cohorts, maintaining institutional protocols and ecological validity. More so, the design allowed for statistical control of pre-existing differences between groups through the use of analysis of Covariance (ANCOVA), increasing the validity of the findings (17, 18). To address internal validity issues arising from non-random assignment, the study utilised analysis of covariance (ANCOVA) with pre-test scores, trained regular lecturers to avoid Hawthorne effects and maintained separation between groups to prevent contamination. In other words, Threats to internal validity were minimised through statistical control via ANCOVA to account for initial group differences, the use of trained regular lecturers to prevent bias and maintaining separation between cohorts to avoid diffusion.

Participants/Sampling Techniques

All Political Science Education students at Delta State University, Abraka, comprised the study's target population. The study population consisted of 856 students at levels 100-400. The study's sample comprised 166 Political Science Education students. The sample size is suitable for an experimental study. The study sample was

selected using multi-stage sampling at two levels and the balloting methodology. The levels that made up the entire Political Science Education served as the sampling units for the initial sampling round. Two levels were randomly selected from the four levels for the second round of sampling. Purposive sampling was used and two intact classes were chosen for the study. Students' gender was one of the characteristics considered when choosing students.

A power analysis was performed to ensure that the sample of 166 students was sufficient. The necessary sample proportions or size to assess an impact on learned outcomes, particularly on students' scores, was calculated with a power of eighty per cent (80%) and an alpha level of $p < 0.05$. According to prior research, the study on student academic outcomes was expected to yield an effect size of $d = 0.44$, reflecting an adjusted mean difference of 0.44. A modification has been implemented in the calculation of power by employing $1p(M-1) \times ICC$, with M denoting the students' population for each class, while ICC denotes the class correlation factor or coefficient. In the scenario where 83 students from each of the two classes are to be involved, an ICC of 0.01 leads to the calculation of a correction feature/factor of 1.00, determined by the formula: $1.00 (1 + (83 - 1) \times 0.01)$. The requisite sample size was established at 166 pupils, selected from two intact classes.

Area of Study

The study was carried out at Delta State University main campus, located in the university town of Abraka, Ethiope East Local Government Area, Delta State, Nigeria. The sampling and research site is geographically bounded within the South-South geopolitical zone of Nigeria, at GPS coordinates 5.7917° N latitude and 6.0987° E longitude, respectively. The university environment provides an accessible student population for measuring learning outcomes in the Political Science Education targeted curriculum using the Think-Pair-Share approach.

Instrument

The "Students Learned Outcomes Test" (SLOT) was the research instrument used for the study. The Political Science Education contents/topics covered during the study period served as the basis for the SLOT, which consisted of 25 multiple-choice questions drawn from past examination questions. The curriculum informed the content.

The contents covered are politics, power and the federal system of government. The researchers systematically developed the Students' Learned Outcome Test (SLOT) to measure academic achievement in core Political Science Education concepts. The development process began with a comprehensive desk review of the official Political Science Education programme curriculum of study and the specific instructional units covered during the six-week intervention period.

To ensure content validity, a table of specifications (blueprint) mapped the test items directly to the curricular topics. Initially, a pool of 40 multiple-choice items was drafted. Each item featured a stem and four response options (one correct answer and three plausible distractors) to minimise guessing artefacts. Following rigorous expert review and psychometric piloting, the instrument was refined to a final set of 25 items.

The items in the SLOT were strategically balanced across the cognitive domains of Bloom's Revised Taxonomy to ensure the test evaluated both foundational and higher-order thinking skills, rather than simple rote memorisation. The items were distributed as follows: Remembering (Cognitive Skills): Approximately 25% of the test; Understanding (Comprehension): 50%; and Thinking (Application): 25%.

The SLOT was administered as an objective, paper-and-pencil instrument for both the pre-test and post-test phases. To eliminate subjective scoring bias and ensure consistent grading across intact classes, a dichotomous scoring matrix was applied: two [2] marks for a correct answer and zero [0] marks for an incorrect or omitted answer. The total composite score was calculated by summing correct responses, yielding a theoretical range of 0 to 50. These raw scores were then transformed into linear interval scales suitable for the

subsequent parametric ANCOVA modelling.

To establish that the SLOT was a robust and psychometrically sound instrument, it underwent construct validity via pilot testing. The refined tool was pilot-tested on an independent group of 30 Political Science Education students who shared identical demographic characteristics with the main sample but were not part of the final study. The pilot data were subjected to an item analysis to calculate the difficulty (p) and discrimination (d) indices. The difficulty and discrimination indices for each item were determined using item-score analysis. Item analysis was used to determine whether to maintain or discard items. The discrimination was determined based on the group's top and bottom 30%. Because the sample reflected the diversity of the population, the range of 0.3 to 0.7 was chosen as appropriate for inclusion in the test as boundary values for selecting items based on difficulty. As a result, fifteen test items were removed, leaving twenty-five questions on the final version of the SLOT.

A table of specifications, as shown in Table 1, was created as part of the test construction process. The examination objectives and the content being tested were displayed in a two-dimensional table. The number of elements and the percentages for each topic were clearly stated in the specification table. Additionally, the table helps the researcher ensure the test's content is valid. The objectives taxonomy in the table, as visualised in Table 1, involves three cognitive reasoning development stages, such as Remembering, Understanding and Thinking (R.U.T.), which were taken into consideration by the researcher when developing the SLOT. The items were divided into three categories: Remembering (25%), Understanding (50%) and Thinking (25%), which together accounted for 100% of the total.

Table 1: Table of Specifications for SLOT

Content Sections	%	Remembering 25	Understanding 50	Thinking 25	Total
Politics	28	2	4	2	8
Power	32	3	4	2	9
Federal System of Government	40	2	4	2	8
Total	100	7	12	6	25

Note: % = Percentage.

The experiment lasted six [6] weeks. The SLOT was given as a pretest and then as a posttest after the intervention. The researcher provided instructions

for the groups. The treatment was administered by two research assistants.

The instrument content and face validity have been established. It was based on three expert

views and a specification table. It was conducted to ensure the various items in the drafted instrument conformed to the specification table. Additionally, it was conducted to ensure that the items covered the topic area. Face validity was used to assess whether the instrument's items measured what was intended. As a result, drafts of the instrument were provided for comment on the suitability or otherwise of the questions. The difficulty and discrimination indices for each item were determined using item analysis of the scores. Item analysis was used to determine whether to retain or discard items.

To ensure the instrument was reliable, it was tested with thirty students from outside the study area who shared traits with the students selected for the research. The instrument was consistent enough, as shown by the Pearson R dependability coefficient of 0.70.

Teaching guide of the TPS style instruction (Treatment) as illustrated in Figure 1.

a) **Think:**

Step (a): The teacher poses questions to get students to think.

Step (b): The students pondered the question for a little while.

b) **Pair:**

Step (c): With 5-7 students in each group, designated partners met to discuss the solutions they had developed.

Step (d): The students compared their written or oral work and presented their responses to the teacher's questions.

c) **Share:**

Step (e): Upon completion of their brief pair discussions, the teacher or instructor asks the pairs to report their findings to the entire class. Action will be initiated as hands are raised or as the teacher addresses each pair.

Step (f): The instructor or an assigned student will write these answers down on a recording sheet on the board.

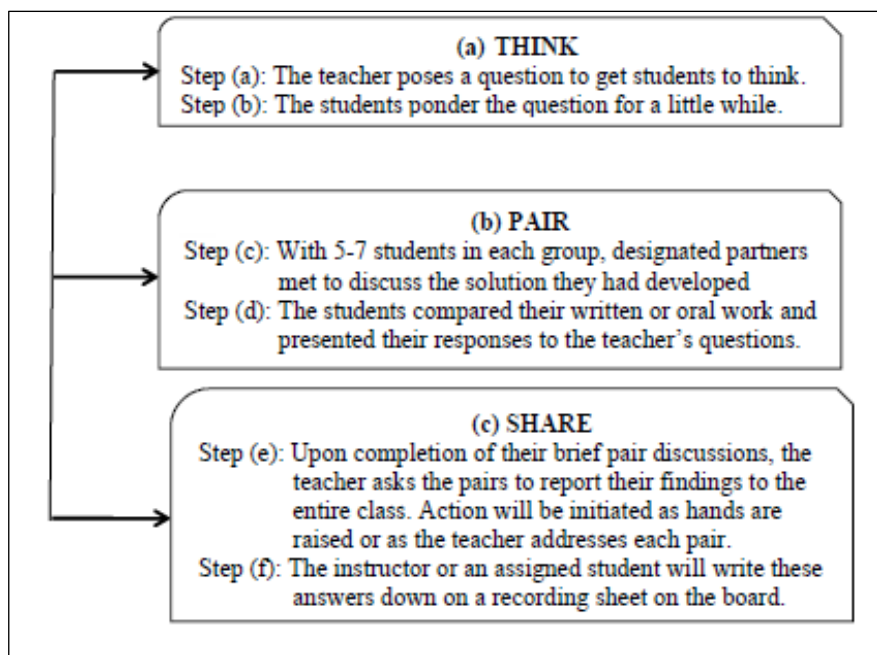


Figure 1: The Step-by-step Visual Presentation of the TPS Style Instruction

The researchers performed a required, standardised three-day professional development training session for all participating regular Political Science Education instructors prior to the start of the study. The structural mechanics of TPS-style education was the main focus of the course. Instructors strictly enforced the time allotted for each phase: silent solitary introspection (Think: 2–3 minutes), collaborative peer dyad debate (Pair: 3–5 minutes) and structured whole-class

democratic discourse (Share: 5–7 minutes). To ensure that no teacher added extra elements or changed the pace of instruction, instructors were given very detailed, synchronised lesson plans that laid out the precise Political Science Education curriculum generated from the official program of study. They were taught to avoid traditional lecture practices, serving only as passive facilitators who monitored peer exchanges

without directing or providing pupils with solutions.

An independent Classroom Observation Protocol (COP) checklist was created in order to collect objective empirical data on delivery consistency. Across observable instructional criteria, the COP used a 4-point rating system of Fully Implemented=3, Partially Implemented=2, Minimally Implemented =1 and Not Implemented =0. These benchmarks explicitly measured the physical and structural organisation of students into functional peer dyads, the consistent distribution of standardised analytical discussion prompts, the reduction of explicit teacher-led lecturing during active cycles and adherence to the sequential Think, Pair and Share timelines.

The researchers observed every experimental session in the classroom every week for six weeks without prior notice. Two raters watched experimental sessions at the same time to remove observer bias. The inter-rater reliability of the observation protocols was calculated using Cohen's Kappa (κ). The research produced a coefficient of 0.78, demonstrating the observation instrument's dependability and a high degree of agreement between the observers.

A high degree of reliability was proven by the cumulative data from the observation protocols. With no session falling below the acceptable threshold of 75%, the average implementation score for all regular teachers was 82%. This high degree of adherence attests to the TPS-style strategy's consistent operational delivery in every classroom.

Procedure and Data Analysis

Both the lecture-style instruction and the TPS-style instruction were used. The experiment lasted

six [6] weeks. The SLOT was given as a pre-test and then as a post-test after intervention.

The researcher provided instructions for the groups. The treatment was administered by two research assistants. The data gathered from the pretest and posttest were analysed statistically with descriptive statistics of the average. These helped differentiate students learned outcomes. To verify the hypotheses, the Analysis of Covariance (ANCOVA) technique was employed. ANCOVA is a statistical tool that can help with quasi-experimental studies like this one by reducing the proportion of the variable's variation attributable to pre-trial factors. In addition, ANCOVA was useful in reducing the error variance that developed throughout the research.

Results and Discussion

RQ 1: Does the TPS-style instruction affect the learned outcomes of Political Science Education students?

Students in Political Science Education who were taught utilising the TPS style instruction had their average pre- and post-test scores shown in Table 2. Pretest scores for students tutored using the TPS style instruction were 49.88, whereas scores for those imparted using the lecture style instruction were 52.77, according to the statistics. Students imparted using TPS-style instruction achieved an average posttest score of 63.33, while students imparted using lecture-style instruction had an average posttest score of 57.91. Students learned outcomes when coached using the TPS-style instruction are affected by the variance in the average. Results from the study's pretest and posttest showed that, compared to lecture-style instruction, the TPS-style instruction marginally improved students learned outcomes. Figure 2 summarises the results.

Table 2: Summary of Pretest and Posttest Average Score of Political Science Education Students Learned Outcomes Subjected to the TPS Style Instruction

Style Instructions	N	Students Learned Outcome Test" (SLOT)				Learned outcome Gain
		Pretest		Posttest		
		Average	SD	Average	SD	
Think Pair Share Style Instruction	83	49.88	9.56	63.33	12.72	13.45
Lecture-Style Instruction	83	52.77	10.71	57.91	10.88	5.15

Note: N = Sample Size, SD = Standard Deviation, $p=0.0036$.

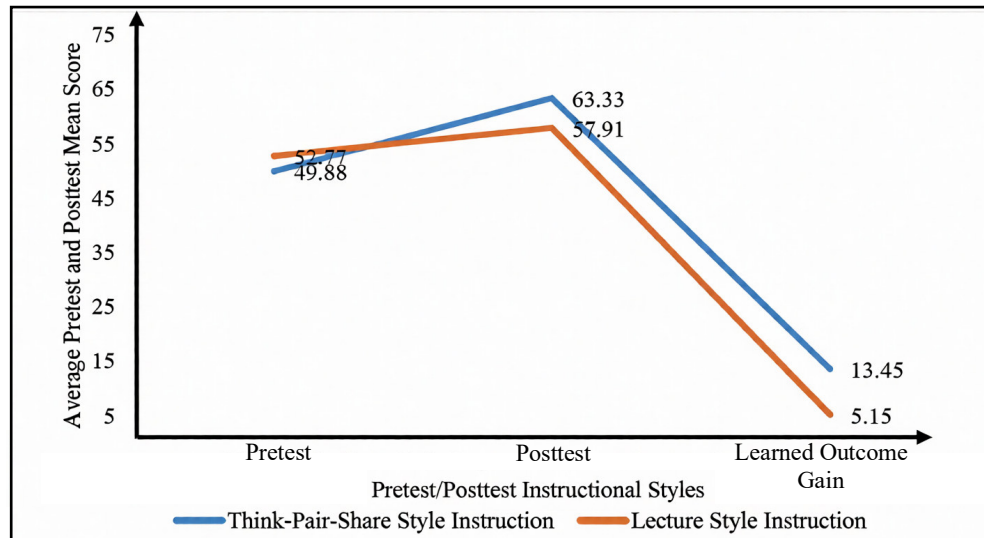


Figure 2: Pretest/Posttest Scores Average of the TPS-Style Instruction

Table 3: Summary of Pretest and Posttest Average on the Learned Outcomes of Political Science Education Students by Gender

Students' Learned Outcomes Test (SLOT)						
Students Gender	N	Pretest		Posttest		Learned Outcomes Gain
		Average	SD	Average	SD	
Male	90	40.32	9.24	60.44	13.12	20.12
Female	76	41.54	9.89	66.37	13.21	24.84

Note: N = Sample Size, SD = Standard Deviation, $p = 0.004$.

RQ2: Does students' gender affect Political Science Education students' learned outcomes when subjected to the TPS-style instruction?

Table 3 and Figure 3 provided an evaluation of the average pre-test (before) and post-test (after) outcomes for male and female Political Science Education students who received TPS-style instruction. The average pretest score for male students was 40.32 and the posttest score was

60.44, resulting in a difference of 20.12 for the learned outcome. The average score of the female students on the posttest was 66.37, resulting in a learned outcomes gain of 24.84. The pre-test score for the female students was 41.54. In relation to the posttest and learned outcomes gain, female students had superior learned outcomes compared to male students.

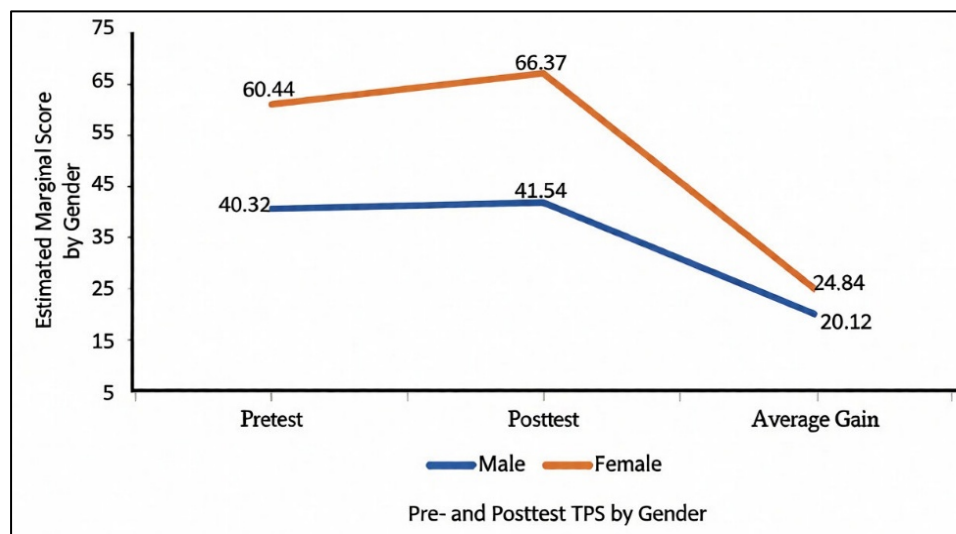


Figure 3: Pretest and Posttest Average Scores of Students Taught with TPS-Style Instruction by Gender

Table 4: Summary of ANCOVA of Considerable Effect of TPS-Style Instruction on Political Science Education Students

Type III Sum of						
Source	Square	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	13344.624	2	6724.588	66.847	0.000	0.498
Intercept	5889.776	1	5889.776	67541	0.000	0.299
Pretest	13237.617	1	13237.617	148.461	0.000	0.495
Think-Pair-Share	2396.322	1	2396.322	27.143	0.000	0.189
Error	9227.772	164	72.567			
Total	455765.010	166				
Corrected Total	23444.887	165				
R Squared = 0.569 (Adjusted R Squared = 0.564)						

R Squared = 0.569 (Adjusted R Squared = 0.564)

Note: Df = Degree of freedom, F = F-statistic (variance ratio), Sig. = Statistical Significance, $p < 0.000$.

Ho1: TPS-style instruction has no considerable effect on Political Science Education students' learned outcomes.

The average posttest scores for students majoring in Political Science Education across the various style instructions are displayed in Table 4, which was examined using ANCOVA. The primary research objective was to determine the independent impact of TPS-style instruction versus traditional lecture-based methods on Political Science Education students learned outcomes. After utilising pre-test scores as a covariate to statistically control for baseline knowledge variations among the intact groups, the main effect of the instructional strategy was found to be exceptionally significant ($F(1, 164) = 2396.322$, $p < .001$). The associated partial eta squared value was 0.189. According to established educational research benchmarks, an effect size of this magnitude is highly substantial. This demonstrates that 18.9% of the unique variance in students' post-test learned outcomes is directly determined by the type of pedagogy applied. This indicates that the active learning intervention accounts for 18.9% of the total variance in student academic performance, representing a practically meaningful and robust educational impact. Therefore, Ho1 (the null hypothesis) is rejected. Thus, the TPS-style instruction has a notable bearing on the learned outcomes of Political Science Education students. This proves that the improvement in students' grades brought about by TPS-style instruction is not a fluke but rather the product of the style instruction itself. With a mean square of 27.143, the TPS-style instruction has a considerable impact. Results show that pedagogical choice accounts for 49.8 per cent of the impact on student success or learned outcomes. The results support that Political

Science Education students learned outcomes are considerably or meaningfully impacted by TPS-style instruction and thus disprove the null hypothesis (Ho1).

Rigorous academic validity was ensured through the performance of diagnostic preliminary tests to check for accurate measurement of the continuous variables and to strictly meet the assumptions required for an Analysis of Covariance (ANCOVA). In particular, the normality, homogeneity of variance, homogeneity of regression slopes and the overall validity of the data set were examined. To test the assumption of homogeneity of variance, Levene's Test of Equality of Error Variances was calculated. The test yielded an F-statistic of $F(1, 164) = 1.436$ with a corresponding p-value of $p = 0.232$. Since this p-value is much higher than the typical alpha level of .05, we conclude that we do not reject the null hypothesis, thus confirming the equality of the variance of the error terms between groups and the successful meeting of the homogeneity assumption. After confirming these parametric prerequisites, a main ANCOVA was conducted to test the effect of the teaching interventions while controlling for baseline differences. Students' pretest scores as the baseline covariate had a statistically significant influence on the posttest results, $F(1, 164) = 148.461$, $p < 0.001$, accounting for a large proportion of variance with a partial eta squared of 0.495.

Critically, after partialing out the statistical variance attributable to these baseline pretest scores, the primary independent variable, TPS-style instruction, had a highly significant independent effect on the Political Science Education students' final posttest learned outcomes, $F(1, 164) = 27.143$, $p < 0.001$. The partial eta squared value $p^2 = 0.189$ reflects the

effect size for this relationship and shows that the TPS-style instruction uniquely accounts for 18.9% of the remaining variance in the dependent variable after accounting for all other components within the model. This p-value is significantly less than the critical threshold of .05. Thus, the null hypothesis that TPS-style instruction has no effect

on students learned outcomes is confidently rejected in favour of the alternative hypothesis. Thus, TPS-style instruction has a significant effect on the learned outcomes of the Political Science Education students. The result is illustrated graphically in Figure 4.

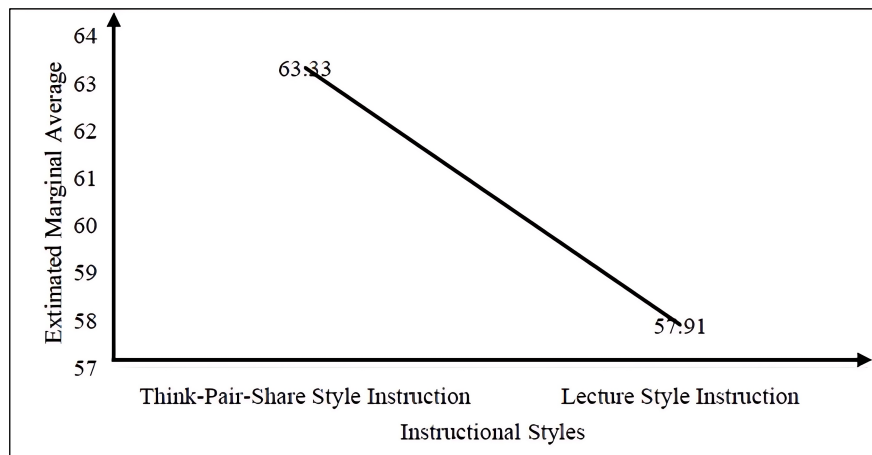


Figure 4: Graphic Illustration of the Effect of the TPS-Style Instruction

Table 5: ANCOVA on the Effect of TPS-Style Instruction on Political Science Education Students' Learned Outcomes by Gender

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8224.862	2	3956.794	22.588	0.000	0.331
Intercept	13117.473	1	13117.473	79.110	0.000	0.401
PRE-TEST	8202.721	1	8202.721	39.666	0.000	0.330
Gender*TPS	3.798	1	3.798	0.028	0.681	0.001
Error	18114.542	80	154.252			
Total	376843.001	83				
Corrected Total	24756.321	82				

R-Squared = 0.332 (Adjusted R-Squared = 0.315)

Note: Df = Degree of freedom, F = F-statistic (variance ratio), Sig. = Statistical Significance, P = 0.681.

Ho2: Students' gender has no considerable effect on Political Science Education students learned outcomes when subjected to the TPS-style instruction.

Table 5 shows no substantial or noteworthy gender influence on students learned outcomes $F(1, 82) = 0.28, p = 0.681$. The result is also illustrated in Figure 5. Consequently, male and female students who received Political Science Education tutoring in a TPS-style format did not considerably differ in their learned outcomes. Therefore, the second hypothesis was supported, which states that when students are tutored using the TPS-style instruction, their learned outcomes are unaffected by their gender. This means that when tutoring Political Science Education students using TPS-style instruction, students' gender does

not significantly affect their learned outcomes. Figure 5 shows the results.

Preliminary tests were performed to verify that the variables were measured correctly and that the assumptions of normality, variance homogeneity, covariance homogeneity, regression slope homogeneity and validity of the data were not violated. There was no statistically noteworthy change in the learned outcome of Political Science Education students after adjusting for their gender ($F(1, 80) = 39.666, p = 0.000$, effect size of 0.001 by gender). After taking into account the other factors that make up the model, this demonstrates that the independent variable is responsible for 33.1% of the variation in the variable that is being studied (the dependent variable).

With an F-value of 0.336 and a p-value of 0.547, Levene's test outcomes indicate that the assumption of variance homogeneity is undoubtedly met. The null hypothesis on variance

is accepted because the p-value (0.547) is greater compared to the traditional 0.05 significance level, demonstrating that instructional impacts were equitable across genders.

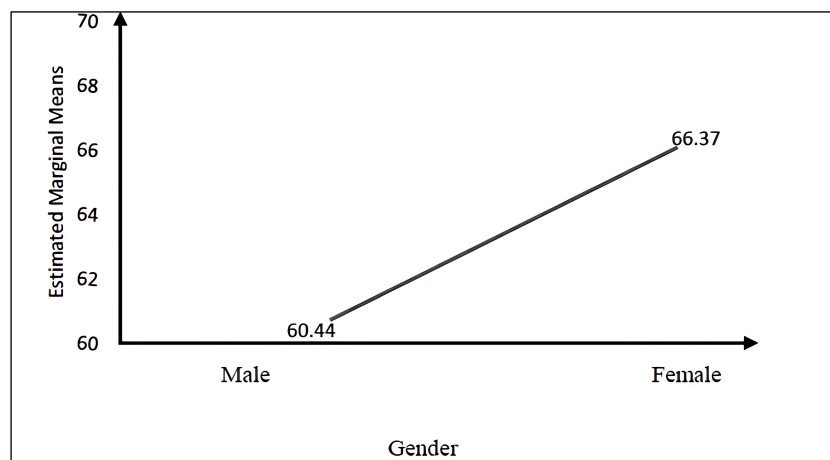


Figure 5: Graphic Illustration of the TPS Style Instruction by Gender

Discussion

The outcome of the first hypothesis demonstrated the noteworthy effect of TPS-style instruction. Students in political science education who received instruction using the TPS-style instruction outperformed those who received lecture-style instruction in terms of learned outcomes. This demonstrated that TPS-style instruction is more effective than lecture-style instruction for teaching Political Science Education. The study's findings show that the TPS-style instruction improved students learned outcomes. TPS-style instruction, which promoted active participation and teamwork rather than turning students into passive listeners, may explain this finding.

The massive F-statistic (2396.322) and substantial effect size ($p = 0.189$) provided powerful empirical justification for shifting away from passive learning in Political Science education. The TPS framework explicitly alters classroom dynamics by replacing rote dictation with high-intensity cognitive engagement. By forcing students to individually formulate political arguments (Think), critically cross-examine those ideas with a peer (Pair) and openly debate civic concepts with the wider classroom (Share), the strategy builds robust mental schemas.

This finding strongly supports social constructivist learning theories. Political literacy is not best absorbed through passive listening; it is actively constructed through structured, collaborative

peer-to-peer discourse. The (18.9%) performance variance captured by this model signals that this active pedagogy creates immediate, measurable cognitive growth in how students process institutional and systemic political concepts.

The TPS-style instruction encourages students to participate in lecture activities and helps them understand the material presented. This outcome aligns with the conclusions of other studies, which found a noteworthy impact of style instruction on students' learned outcomes (13, 19-21). This outcome aligns with preceding studies that have revealed the efficiency or usefulness of TPS-style instruction in improving students learned outcomes.

The TPS-style instruction fosters student engagement in class activities while simultaneously enhancing higher-order thinking and problem-solving abilities (8, 20, 22, 23). The conclusions drawn from this research corroborate a previous study that found that the TPS educational technique enhanced students' learning outcomes (24). The TPS instructional style improved students' academic outcomes (25, 26). In agreement with previous studies, this study also found that TPS-style instruction had a positive effect on students' learning outcomes (3, 6, 8, 27, 28).

However, the study conflicted with studies reporting no noteworthy variation in learning outcomes imparted by TPS-style instruction (4,

29). Their studies revealed that TPS-style instruction did not improve students' learned outcomes when utilised for classroom instruction. The study's findings demonstrated that gender had no noticeable effect on Political Science Education students' learned outcomes. The non-significant effect on Political Science Education students' learned outcomes ($p = 0.681$) provides crucial pedagogical insight. It demonstrates that the TPS-style instruction acts as a gender-neutral educational equaliser. The academic advantages or adjustments provided by active learning, such as structured peer dialogue, collaborative analysis of political systems and individual reflection, benefited male and female students equally. Unlike traditional lecture methods, which can sometimes inadvertently favour specific communication styles, the structured steps of Thinking, Pairing and Sharing created an equitable learning environment. Both genders navigated the political science concepts with statistically parallel trajectories of academic improvement. The outcome may be because the TPS-style instruction acts as a pedagogical equaliser, fostering equivalent cognitive gains for both male and female students. This implies that when students are given equal chance/opportunities to learn in a TPS-style instruction classroom, their learning outcomes would be enhanced, irrespective of their gender. Thus, TPS-style instruction enhances learned outcomes, regardless of gender.

The non-significant main effect of gender and the absence of a significant instructional strategy-by-gender interaction ($F = 0.28$, $p = 0.681$) make a meaningful contribution to the ongoing debate over gender-based academic performance variances. The findings of the study align closely with a growing body of contemporary educational research indicating that active learning strategies operate as democratic equalisers. Gender did not affect students' learning outcomes, which may reflect the TPS-style instruction model dismantling traditional, male-dominated classroom dynamics by providing structured, low-stakes opportunities for equal student engagement and knowledge construction. This may be attributed to the equal opportunities afforded to male and female students to partake in or participate in class activities, thereby enhancing their learning outcomes. The results parallel the findings of other researchers, where the implementation of a TPS-

style instruction framework significantly bridged or eliminated baseline gender-based learned outcome gaps (3, 5, 16, 17, 22, 29-31). Similarly, this outcome echoes other studies that found TPS-style instruction produced equivalent learned outcomes among male and female students, suggesting that the pedagogy's structural mechanisms are inherently gender-friendly (32-34).

This finding contradicted several traditional civic socialisation studies that have historically argued for disparity, as male and female students demonstrate higher political interest, awareness and learned outcomes due to gendered socialisation patterns (35, 36). It also diverges from active learning evaluations, such as those by researchers who observed disparity among male and female students in oral participation and voluntary responses in interactive classrooms, leading to uneven learning gains (16, 37).

Conclusion

In conclusion, the study provided a practical foundation for investigating the effect of TPS-style instruction on the learned outcome of Political Science Education students. The study demonstrated that TPS-style instruction improved the learned outcomes of Political Science Education students. It also revealed that students' gender had no noteworthy impact on the learned outcomes of Political Science Education students tutored using the TPS-style instruction. The TPS-style instruction improved the learned outcomes of male and female students in Political Science Education.

The study recommendations are based on the study conclusions that TPS-style instruction should be utilised as one of the teaching approaches for the teaching of Political Science Education in our tertiary institutions and instructors of Political Science Education should obtain government training on the implementation of innovative pedagogical style instructions such as TPS-style instruction in classroom environments. Finally, students of both genders should have equal access to educational opportunities.

This study has certain limitations or flaws. Initially, the study was conducted with the students' regular Political Science Education instructors. The study's findings may have been impacted by the instructors' personalities, experiences, attitudes

and gender, all of which were overlooked. The methodological constraints include the use of a non-randomised quasi-experimental design with intact groups, potential maturation effects within aggregated grade levels and a small, restricted sample size of 166 students. Further limitations stem from conducting the intervention with regular instructors without controlling for teacher-level variables, alongside a short six-week duration prone to novelty effects and the use of a conservative reliability estimation formula. These methodological, sampling and operational restrictions, including a rigid adherence to the existing curriculum, limit the internal validity and broader generalizability of the findings.

Despite being six weeks long, the experimental/intervention period was effectively limited to the instruction period. This was to ensure the investigation would not interfere with the school's routine operations. To ensure nothing interfered with the school and classes' ability to operate smoothly, the content imparted was also restricted to that specified in the programme of study. The outcomes of this study are thought to be more broadly applicable if more instructional units are used.

Future Research

Future studies should examine how TPS-style instruction affects students learned outcomes over time and whether it can reduce achievement inequalities in other courses and educational environments. Studies should conduct real randomised controlled trials (RCTs). Randomly assigning each student to either the TPS-style instruction experimental group or the traditional lecture control group will help separate the effects of active learning from other classroom factors and using longitudinal research designs that cover a full academic session or several consecutive semesters. This study should be repeated on a much bigger, multi-institutional sample that includes a wider range of universities, regions and types of students.

Practical Implications

This study demonstrates that employing the TPS-style instruction produces beneficial results that improve students learned outcomes in Political Science Education. This implies that teachers and curriculum planners must incorporate TPS-style instruction into instructional practices to encourage active participation, problem-solving

and retention among university undergraduates. It also emphasises the importance of training programmes for instructors that rely on experiential teaching methods. Furthermore, the findings highlight the importance of practical and learner-centred education in closing the learned outcomes difference. Policymakers and school administrators should encourage the development of resources and facilities to facilitate experiential learning in higher institutions of learning.

The findings of this study suggest that teachers can enhance students learned outcomes using TPS-style instruction and that high-impact active learning, when properly guided by a competent teacher and using TPS-style instruction in Political Science Education, can be taught with great success by regular instructors of the discipline. It therefore recommends that the Nigerian university administration make instructional design workshops permanent and mandatory for regular instructors of Political Science Education. The provision of mobile furniture and collaborative cluster seating in Nigerian University classrooms will enable the teachers to proceed easily and quickly into the peer pairing sequences without physical classroom bottlenecks affecting routine classroom activities.

These findings are a structural solution for those who are worried about the gender gap in political participation and civic knowledge among university students in Nigeria. Policy planners should be proactive in changing from unstructured open-floor discussions, where speaking student voices are usually more numerous than listening voices, to structured dialogue in pairs, such as Think and Pair. This results in a low-anxiety atmosphere in which women undergraduates can develop and present their political arguments without needing to have separate, gender-specific interventions.

Abbreviations

ANCOVA: Analysis of Covariance, ICC: Class Correlation Factor, RUT: Remembering, Understanding and Thinking, SLOT: Students' Learned Outcome Test, TPS: Think-Pair-Share.

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Author Contributions

Daniel Mevayerore Igbini: Conceptualisation, Writing - Initial Article Draft, Methodology, Data Collection Logistics, Olubusola Olabisi Renner: Data Collection Logistics, Data Analysis, Data Interpretations, Sunday Obro: Methodology Writing, Data Analysis, Data Interpretations, Discussing the Findings, Conclusion Writing, Review, Editing, Uche Ken Emoefe Ekiugbo: Conceptualisation, Initial Article Draft, Critical Revision, Shashikant Nishant Sharma: Statistical Analysis, Subsequent Revisions, Grammar Corrections. All authors reviewed and approved the final version of the manuscript.

Conflict of Interest

There is no conflict of interest.

Data Availability

The datasets used and/or analysed during the current study are accessible from the corresponding author on request.

Declaration of Artificial Intelligence

(AI) Assistance

The writer employed generative artificial intelligence (AI) tools to aid in language refinement, grammatical correction, clarity enhancement and the elevation of the manuscript's academic writing style. All modifications proposed by the AI tools were meticulously examined, validated and adjusted by the author. The authors retain complete accountability for the manuscript's content, precision and integrity.

Ethics Approval

The researchers obtained ethical approval from Delta State University and the Social Science Education Department's Ethical Review Board. Authorisation was also conferred by the school and departmental authorities (Delta State University Office order ref. no: DELSU/FOE/REGC/25/08 and Department of Social Science Education Ref. No.: DELSU/FOE/SSE/HOD/2025/017).

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References

1. Majemite H, Dania PO, Ogheneakoke EC. Effects of Group-Based Mastery Instructional Strategy on Academic Performance of Social Studies Students in Delta State Upper Basic Schools. *GPH-International Journal of Educational Research*. 2024;7(08):102-113.
<https://doi.org/10.5281/zenodo.13856046>
2. Okoro PE. Application of Zoom E-Learning Management System in Business Education in Universities in Nigeria. *International Journal of Religion*. 2024;5(5):317-326.
<https://doi.org/10.61707/n075ky12>
3. Akanmu MA. Effects of Think-Pair-Share on Senior School Students' Performance in Mathematics in Ilorin, Nigeria. *African Journal of Educational Studies in Mathematics and Sciences*. 2019;15(2):107-116.
<https://dx.doi.org/10.4314/ajesms.v15i2.9>
4. Stella DG, Gabriel G. Effects of Think-Pair-Share and Problem Based Instructional Strategies on Students Interest in Biology in Taraba State, Nigeria. *International Journal of Innovative Education Research*. 2024;12(3):217-222.
<https://zenodo.org/records/13832583>
5. Usang FP, Okoli JN. Effect of Think-Pair-Share Teaching Strategy on Secondary School Students' Achievement in Chemistry in Cross River State. *OSR Journal of Research & Method in Education (IOSR-JRME)*. 2021;11(2): 42-48.
doi: 10.9790/7388-1102044248
6. Akinduro IR, Inuwa, MG. Effect of Think-Pair-Share on Students Academic Achievement and Interest in Electrical/Electronic in Technical Colleges in Niger State. *International Journal of Research and Scientific Innovation (IJRSI)*. 2025;XII(V):1091-1097.
<https://doi.org/10.51244/IJRSI.2025.120500105>
7. Parker J, Asare I. Teacher Trainees Perceptions of Think-Pair-Share Technique in Teaching Classification of Living Organisms in Colleges of Education, Ghana. *Science Education International*. 2021;32(4):368-373.
<https://doi.org/10.33828/sei.v32.i4.12>
8. Ibe FN. Impact of Think-Pair-Share Instructional Strategy on Secondary School Students' Academic Retention in Chemistry. *Journal of Education, Teaching and Learning Research*, 2025;1(3):56-66.
<https://doi.org/10.64420/jetlr.v1i3.309>
9. Torkula PT, Kyausu CS. Effects of Think-Pair-Share Strategy on Students' Interest and Academic Performance in Basic Science, Benue State, Nigeria. *Kontagora Journal of Education (KONJE)*. 2026;1(1):133-144.
doi:10.5281/zenodo.20038679
10. Eze TI, Ezenwafor JI, Onwusa SC. Effect of Computer-Assisted Instruction on Students' Academic Achievement and Retention of Auto-Mechanics Technology in Technical Colleges. *The International Journal of Humanities and Social Studies*. 2020;8(7):87-93.
doi: 10.24940/theijhss/2020/v8/i7/HS2007-009

11. Ekundayo SK. Effects of Computer-Assisted Instruction (CAI) on Students' Academic Achievement in Chemistry Among Boys and Girls in Public Secondary Schools in Ondo State, Nigeria. *British Journal of Education*. 2022;10(2):31-41. doi: 10.37745/bje.2013
12. Elbechir Y. Teacher-Students Interaction in EFL Classroom in the Algerian Secondary School. *Journal of Human Sciences*. 2021;8(2):1362-1373. doi:10.35395/1728-008-002-085
13. Halim HA, Basri MF, Jaafar H, Al R, Saad J. Perceptions of Game-Based Learning of Accounting Among Gen Z Undergraduates. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*. 2021;12(3):727-733. <https://doi.org/10.17762/TURCOMAT.V12I3.778>
14. Oladotun OO. Cognitive Styles and Gender as Predictors of Students' Achievement in Summary Writing in Selected Secondary Schools in Ibadan, Nigeria. *Education Research International*. 2020;4(1):1-9. doi:10.1155/2020/8462368
15. Rudhumbu NA. Gender-Based Analysis of Classroom Interaction Practices: The Effect thereof on University Students' Academic Performance. *International Journal of Learning, Teaching and Educational Research*. 2022;21(5):22-45. doi: 10.26803/ijlter.21.5.2
16. Mwihiia C. Gender difference in Achievement of Students in Kinangop Sub-County, Nyandarua County, Kenya. *European Journal of Social Science Studies*. 2020;5(4):19-28. <http://dx.doi.org/10.46827/ejsss.v5i4.863>
17. Ismail NY. Using Think-Pair Share Cooperative Learning strategy to Improve EFL University Students' Achievement. *Journal of Tikrit University for Humanities*. 2019; 26(12):1-20. <https://doi.org/10.25130/jtuh.26.12.2019.24>
18. Ode D. Effects of Computer-Assisted Instruction on Secondary School Students' Academic Achievement in the Learning of Government as a Subject. *International Journal of Education (IJE)*. 2018;6(2):39-44. doi: 10.5121/ije.2018.620439
19. Majemite H, Dania PO, Ogheneakoke EC. Think-Pair-Share Instructional Strategy and its Effects on Upper Basic Social Studies Students' Academic Performance in Delta State. *NIU Journal of Educational Research*. 2024;10(2):31-39. doi:10.58709/niujed.v10 i2.1997
20. Akhtar M, Khalil A, Noshaba A, Khalil S. Effect of Think-Pair-Share and Choral Response Assessment Methods on Academic Achievement of Prospective Science Teachers. *Journal of Turkish Science Education*. 2024;21(3):549-565. <https://doi.org/10.36681/tused.2024.029>
21. Sari CI, Fitriyah CZ, Puspitaningrum DA. The Effect of Cooperative Learning Model Type Think Pair Share on Social Attitudes of Elementary School Students. *Jurnal Review Pendidikan Dasar: Jurnal Kajian Pendidikan dan Hasil Penelitian*. 2025;11(1):1-11. <https://doi.org/10.26740/jrpd.v11n1.p1-11>
22. Dajal, RG, Awoyeye, AO. Effects of Think-Pair-Share Instructional Strategy on Interest and Achievement in Ecology Concept among Secondary School Biology Students in Federal Capital Territory, Abuja, Nigeria. *Federal University Gusau Faculty of Education Journal* 2026;3(1):72-79. <https://doi.org/10.64348/zije.2026347>
23. Guenther AR, Abbott CM. Think-pair-share: promoting equitable participation and in-depth discussion. *PRiMER: Peer-Reviewed Reports in Medical Education Research*. 2024;8(7):1-6. <https://doi.org/10.22454/PRiMER.2024.444143>
24. Efendi N. The Implementation of the Think-Pair-Share (TPS) Learning Model to Improve Students' Motivation and Learning Outcomes in the Bioenergy Course. *Jurnal Penelitian Pendidikan IPA*. 2026;12(4):417-423. doi: 10.29303/jppipa.v12i4.13127
25. Mundelsee L, Jurkowski S. Think and Pair before Share: Effects of Collaboration on Students' In-Class Participation. *Learning and Individual Differences*. 2021;88:1-6. <https://doi.org/10.1016/j.lindif.2021.102015>
26. Alibo, TK, Itohonsa O. Effect of Think-Pair-Share Strategy on Students' Academic Achievement in Programming Concepts in Secondary Schools in Bayelsa State. *FUO-Journal of Educational Research*. 2025;4(2):178-187. <https://doi.org/10.5281/zenodo.14886152>
27. Badru AK. Effect of Think-Pair-Share Instructional Strategy on Senior Secondary School Students' Academic Achievement in Mathematics in Ogun State. *Humanika: Kajian Ilmiah Mata Kuliah Umum*. 2025;25(1):11-22. doi: 10.21831/hum.v25i1.79373
28. Adeoye IF, Alayande E. Effect of Timed Think-Pair-Share and Circle Chat on Students' Academic Achievement in Basic Chemistry Concepts. *International Journal of Novel Research in Education and Learning*. 2024;11(5):77-87. <https://doi.org/10.5281/zenodo.14000824>
29. Daiko C, Achor EE, Jack GU. Jigsaw, Think-Pair-Share and Cooperative Instructional Strategies and Retention of Students' Knowledge in Carbohydrate. *Journal of Research in Science and Mathematics Education (J-RSME)*. 2023;2(3):117-135. <https://doi.org/10.56855/jrsme.v2i3.685>
30. Mbanefo HI, Ozoji BE, John F. Effect of Think-Pair-Share Instructional Strategy on Senior Secondary Two Students' Achievement in Genetics in Abuja, Nigeria. *Journal of Biology and Genetic Research (JBGR)*. 2026;12(3):65-76. <https://doi.org/10.56201/jbgr.vol.12.no3.2026.pg65.76>
31. Yusuf AR, Owede VC, Bello MB. Effect of Think-Pair-Share Instructional Strategy on Students' Achievement in Civic Education in Bayelsa, Nigeria. *Anatolian Journal of Education*. 2018;3(2):47-62. <https://doi.org/10.29333/aje.2018.325a>
32. Abubakari A, Nabie MJ. The Effect of Think-Pair-Share Cooperative Learning Approach on Retention among Senior High School Students in Mensuration. *European Journal of Contemporary Education and E-Learning*. 2024;2(5):19-35. doi: 10.59324/ejceel.2024.2(5).02
33. Ndanwu AI, Ezejiofor VO, Esimone RO. Think-Pair-Share Instructional Method: A Pedagogical Tool for Enhancing Students' Academic Achievement in Cataloguing and Classification. *Tropical Journal of Education*. 2022;4(1/2):1-9.

- doi: 10.47524/tje.v4i1.2
34. Ugwu EO. Effect of Student Teams Achievement Division and Think-Pair-Share on Students' Achievement in Reading Comprehension. *African Journal of Teacher Education*. 2019;8:218–237. doi: 10.21083/ajote.v8i0.5209
 35. Tsaoasis I, Alghamdi MH. Examining Academic Performance across Gender differently: Measurement Invariance and Latent Mean differences using Bias-Corrected Bootstrap Confidence Intervals. *Front Psychology*. 2022;13:896638. doi: 10.3389/fpsyg.2022.896638
 36. Abimbade OA, Olasunkanmi IA, Akinyemi LA, Lawani EO. Effects of Two Modes of Digital Storytelling Instructional Strategy on Pupils' Achievement in Social Studies. *TechTrends*. 2023;67(3):498–507. doi: 10.1007/s11528-023-00858-6
 37. Hsiao JC, Chen SK, Chen W, Lin SS. Developing a Plugged-In Class Observation Protocol in High-School Blended STEM Classes: Student Engagement, Teacher Behaviors and Student-Teacher Interaction Patterns. *Computer Education*. 2022;178:104403. doi: 10.1016/j.compedu.2021.104403

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