

# Is There Any Possibility of Improving Upper Basic Students' Self-Confidence and Academic Performance in Social Studies Using PEDDA and IEPT Instructional Strategies? — A Field Report

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## Abstract

This research investigated the possibility of improving upper basic students' attention and academic performance in social studies in Benue State, Nigeria using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) and Invitation, Exploration, Proposing-Explanation and Taking action (IEPT). The study adopted a pretest, posttest, control group, quasi-experimental research design. The instruments used for data collection were Social Studies Self-Confidence Scale (SSSCS) and Social Studies Performance Test (SSPT). Cronbach Alpha was used to ascertain the reliability index of SSSCS which gave reliability values of 0.86. Kuder-Richardson (KR-21) formula was used to test internal consistency of SSPT which yielded a reliability value of 0.92. The population was 11,656 Upper Basic Two students offering social studies in Benue State, Nigeria. A sample of 288 students (Male=158 and female=130) drawn from 9 schools within the 9 Local Government Areas (LGA) out of 23 LGA in the Benue State, Nigeria was selected using multi-stage sampling techniques. Two research questions and two null hypotheses guided the study. The research questions were answered using Mean and Standard Deviation scores while the null hypotheses were tested at 0.05 level of significance using results from Analysis of Covariance (ANCOVA). The study revealed that there was significant difference in the mean self-confidence ratings of students taught social studies using PEDDA, IEPT strategy and discussion method [ $F_{2, 287}=2146.076, P<0.05$ ]. The study revealed that there was significant difference in the mean academic performance scores of students taught social studies using PEDDA strategy, IEPT strategy and discussion method [ $F_{2, 287}=374.360, P<0.05$ ]. It was recommended among others that to maximize self-confidence in social studies class, teachers' trainee should be train on the application of PEDDA strategy and IEPT strategy and serving teachers should employ the use of PEDDA and IEPT strategies in teaching social studies. Social studies teachers are also encouraged to use PEDDA strategy in teaching to enhance students' self-confidence and academic performance in social studies.

**Keywords:** PEDDA strategy, IEPT strategy, self-confidence, academic performance

## 1. Introduction

Social studies is the study of man as he interacts with his different environments. The environment could be physical, social, political, cultural or economic. Social studies teaches students fundamental concepts of culture, economics and politics. Akoh (2013) points out that social studies involves the totality of man as it takes and uses concepts, skills, knowledge values and attitude from the social science subjects such as economics, geography, psychology among others. The emergence of social studies education into the Nigerian school curriculum was part of a general culture and values in response to the problems of neglect of societal culture and values (Igu, 2011). The author further posited that social studies was seen as a necessary and veritable tool after the civil war to help rebuild the battled nation and to reverse colonial education which did not appreciate and accommodate our cherished culture and values. The author also opined that social studies have not achieved its aims.

Social studies, as an integrated discipline, have been equipped with necessary vital tools for promoting and sustaining culture and values in the society. The importance of social studies lies in its ability to foster the acquisition and development of knowledge, skills, attitudes and values that are worthwhile through appropriate teaching/learning methods in order to meet challenges in Nigeria (Mbaba & Omabe, 2012). In this regard, Mbaba and Omabe (2012) observe that repositioning social studies will help to achieve its ultimate goal which is to produce the right caliber of students equipped with the right type of culture, values, attitudes and skills for national development. Zaria and Aboho (2011) noted that any educational process that trains children without social studies will fail to provide social development of the individuals, because social studies is a great force behind individual personality, moral and societal development. By implication, any nation that isolates or neglects social studies education stands the risk of becoming morally and socially bankrupt.

Despite the importance of social studies education and the efforts of researchers such as Haruna (2018) and Adedayo (2019) to improve on its teaching and learning, academic performance of students in the subject remains poor in Nigeria. The issue of poor academic performance in social studies at the Upper Basic

Education level of education in Nigeria has been widely documented. For instance, Ajayi, Aboho, Ajayi (2018) revealed that all the Upper Basic school candidates that registered for the Basic Education Certificate Examination in Zone C of Benue State in 2018 only 40.28% passed social studies at credit level and in the subsequent years the percentage passes at credit level dropped to 38.68% in 2019 and only 39.75% in 2020. Therefore, it appears right to claim, that there is a general trend of poor academic performance in social studies in Upper Basic education level. The implication of the persistent poor academic performance in social studies is that the much-needed educational development and social harmony of this nation will remain a wishful thinking until the inherent problems are identified and remedied.

Social studies if properly taught using effective and appropriate strategies, students' academic performance could be improved and therefore provide the nation with valuable development, which are required for the achievement of both personal and national goals. Ilori (2012) opined that social studies teachers should not stick or focus on only one particular strategy of teaching such as discussion method for every lesson. This is because it is only when a student has good mastery of the subject that he can do well in examination. Okafor (2014) in a related contribution laments that the teaching and learning of social studies in Nigerian schools are faced with serious problems such utilization of ineffective teaching strategies such as lecture method and discussion method by teachers. Social studies teachers have used a number of teaching methods in the past. Such methods are demonstration, field trip, project method, lecture, expository, question and discussion methods. Studies have shown that these methods have not yielded expected result (Ajiboye, 2015; Inomesia & Unuero, 2017; Ajayi, 2019).

The attention of many social studies educators has continued to be directed at searching for appropriate strategies of teaching social studies. Fayemi (2016) and Haruna (2018) investigated the causes of students' poor academic performance in social studies. The findings of these scholars revealed that the ineffective teaching methods such as lecture and discussion method employed by upper basic school social studies teachers are the most recurring causes of students' poor academic performance. Similarly,

Adedayo (2019) noted that discussion method is popular in teaching/learning of social studies in upper basic schools in Nigeria. Discussion teaching method is the collaborative exchange of ideas among a teacher and students or among students for the purpose of furthering students thinking, problem solving, and understanding (Wilkinson, 2016). Adedayo (2019) further added that discussion method has received a lot of criticisms from different scholars such as Archibong (2016) and Olorundare (2017). The scholars noted that discussion method may degenerate into mere talk and may be monopolized by few individuals. This may consequently lead to a conclusion far from the truth even though such may be accepted by the group as a whole. These have led to teachers not exposing the students to meaningful learning.

Consequently, social studies teaching can only be result oriented when students are willing, and the teachers are favourably disposed to using appropriate strategies. Considering the fast speed of change and innovation in knowledge, being socially and mentally active learners, being learners who are aware of their own cognition and develop self-confidence and attention seems necessary. This assertion calls for the need to find innovative strategies such as Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) conceptual change instructional strategy and Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) constructivist instructional strategy that may have the potentials to equip learners to think about their cognition, monitor their learning activities and evaluate the results of these activities and thereby enhancing their conceptual understanding.

Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) strategy is a five-step conceptual change instructional strategy, and it is from this step the acronym "PEDDA" is derived. PEDDA is an instructional strategy where learners construct their own knowledge by testing ideas based on prior conception, then explore an activity and are required to compare their new knowledge gained with their prior conception and applying these ideas to a new situation, thereby enhancing conceptual understanding (Brown, 2014). PEDDA takes cognizance of learners' prior knowledge before learning a new concept. This is aimed at learners' achieving the required

social conception of such concept. PEDDA strategy also provides students the opportunity to interact with the teacher and also among themselves in the classroom (Ekon & Nwosu, 2016). This strategy focuses on linking students existing ideas and beliefs relevant to a situation and exploring the appropriateness of these ideas and beliefs (Rickey & Stacey, 2017).

Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy is a four-step constructivist instructional strategy and it is from this step the abbreviation "IEPT" is derived. IEPT is a constructivist instructional strategy where students are engaged actively in constructing knowledge through exploration of activities, discussion and evaluation of the results of these activities thereby enhancing conceptual understanding. In other words, this strategy arranges learning experiences through invitation (Invitation involves recognition of the problem), exploration, proposing explanation and taking action so that students have the opportunity to construct their understanding of a concept (Canella, 2011). IEPT is a strategy adopted by a teacher to teach through activity in which the students participate thoroughly and bring about efficient learning experience. It is a strategy in which the child is actively involved both mentally and physically. IEPT strategy is a form of strategy that encourages thoughtful reflection on activity explored. Self-confidence is an individual's characteristic which enables the learner to have positive or realistic views of learner or the situations that the learner is in (Al-Hebaish, 2012).

Self-confidence can be explained as an individual's expectation of his or her ability to achieve a goal in a given situation and is a very influential factor in ensuring that a person's potential is realized. In other words, individuals with high self-confidence may have a realistic view of themselves and their capabilities which makes them to be persistent in their endeavours. According to Tunçel (2015), self-confidence generally plays an important role not only in personal and social aspect of life but in school life as well, and at every stage of life towards success and this can have effect on their academic performance. Moreover, Ayodele (2014) opines that self-confidence may facilitate or debilitate students' academic performance. This is because learners who possess high self-confidence are likely to perform well in school due to the belief, they have in themselves.

Whereas learners with low self-confidence may be reasonably thought to be prone to uncertainty, insecurity, anxiety and social distance which can affect their academic performance or success in life generally.

According to Ahmed (2016), students' poor self-confidence that, they don't have the ability needed to complete the cognitive-ability test or task has also been attributed to the ineffective teaching methods such as discussion method adopted by teachers. Hence, developing lessons using innovative strategies that involve students' active participation when engaging in social studies activities are anticipated to uplift self-confidence and academic performance. Thus, the study investigated if there any possibility of improving upper basic students' attention and academic performance in social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) and Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) instructional strategies. Since, PEDDA and IEPT strategies are associated with meaningful and mastery learning. They enable students to identify the major concepts and relate them to the concepts in their existing knowledge structure (Kinchin, 2013). The learner therefore plays an active role in knowledge construction, which leads to meaningful learning.

## 2. Statement of the Problem

Students' poor self-confidence and poor academic performance in social studies in external examinations such as Basic Education Certificate Examination (BECE) conducted by Benue State Ministry of Education appears to have persisted which is often blamed on poor teaching methods that does not put into consideration the students' activity, attention and prior experience in teaching and learning processes. Social studies being a core subject at the upper basic education level of education is expected to serve as a base to guide students to know and be conscious of common values of the society. Despite the importance of social studies education, it has been observed that not much attention is placed on effective teaching strategies of this subject. This has led to failure to produce the desired results in terms of academic performance and poor self-confidence on the part of students and even in terms of behavioural output which in most cases has drastic consequences on the moral and value development in our country.

Poor teaching method invariably translates to students' poor self-confidence, inattention and poor academic performance. Most Nigerian social studies teachers use discussion method most frequently in their classrooms which usually degenerate into mere talk and may be monopolized by few individuals. This may consequently lead to a conclusion far from the truth even though such may be accepted by the group as a whole. Based on this, the nation's quest for social studies to produce the right calibre of citizens equipped with the right type of culture, values, attitudes and skills for national development will become a mirage, if effective modality is not put in place to incorporate innovative methods that promote meaningful learning and considering the importance of social studies in all round social and moral development, there is needs to ensure that social studies is properly taught using innovative strategies. Therefore, this study investigated the possibility of improving upper basic students' attention and academic performance in social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) and Invitation, Exploration, Proposing-Explanation and Taking action (IEPT).

## 3. Purpose of the Study

The purpose of this study was to investigate the possibility of improving upper basic students' attention and academic performance in social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) and Invitation, Exploration, Proposing-Explanation and Taking action (IEPT). Specifically, the study was set out to:

- 1) determine the effects of PEDDA, IEPT strategies and discussion method on students' self-confidence in social studies.
- 2) determine the effects of PEDDA, IEPT strategies and discussion method on students' academic performance in social studies.

## 4. Research Questions

The following research questions guided this study:

- 1) What are the mean self-confidence ratings difference among students taught social studies using Prior-Conception, Exploration,

Discussion, Dissatisfaction and Application (PEDDA), Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategies and discussion method?

- 2) What are the mean academic performance scores difference among students taught social studies using PEDDA, IEPT strategies and discussion method?

## 5. Hypotheses

The following null hypotheses guided the study:

- 1) There is no significant difference in the self-confidence ratings of students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA), Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategies and discussion method.
- 2) The difference in the academic performance scores of students taught social studies using PEDDA, IEPT strategies and discussion method is not statistically significant.

## 6. Research Design and Procedure

The study adopted a quasi-experimental non-randomized pre-test, post-test control group design. This design was adopted because it is not possible to have complete randomization of the subject as this may disrupt school organization. The study area is Benue State, Nigeria. Benue State lies within the lower river Benue trough in the middle belt region of Nigeria. The population for this study comprises all the students offering social studies at Upper Basic Two numbering 11,656 from all the 227 approved Upper Basic schools in the 23 Local Government Areas of Benue State, Nigeria. The population of the study comprised of Upper Basic Two students numbering 6,830 boys and 4,826 girls (Benue State Teaching Service Board, Statistics Unit, 2021). The sample of this study was made up of 288 Upper Basic Two students that were drawn from 9 schools: three schools respectively in Education Zone A, Education Zone B and Education Zone C of Benue State, Nigeria. A multi-stage sampling procedure was used in the study. In stage one, three Local Government Areas (LGAs) were selected out of Zone A, Zone B and Zone C respectively. One school from each of the nine LGAs was drawn

using purposive sampling technique. Two instruments known as Social Studies Self-Confidence Scale (SSSCS) and Social Studies Performance Test (SSPT) developed by the researchers were used in this study.

Social Studies Self-Confidence Scale (SSSCS) was a researcher made 25 items questionnaire which was intended to help students express their confidence in answering social studies related questions or problems. Each of the items is a 4-point Likert modified rating scale with 4 response options. The options are Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The items were developed from information acquired through review of relevant literature by the researcher. Social Studies Performance Test (SSPT) was adapted from Basic Education Certificate Examination (BECE) past examination question papers of 2015-2020. SSPT items were based on BECE, which is standardized, since the target of the study is to improve the students' academic performance, at this level. The test instrument consists of two sections. Section A consists of bio-data information of the respondents, while section B consisted 30 multiple choice objective items with four options (A, B, C, D) drawn from the concepts of social studies to which respondents are expected to provide the correct answers by selecting the correct option.

Social Studies Self-Confidence Scale (SSSCS), Social Studies Performance Test (SSPT) and the instructional packages (lesson notes) were face validated by presenting them to two experts in social studies education and one expert in test and measurement in the Department of Curriculum and Teaching, Benue State University, Makurdi. The items were scrutinized by these experts. Corrections and suggestions arising from these experts were used to review the instruments and the instructional packages. SSSCS and SSPT upon validation were trial tested to establish the reliability of the instruments by administering SSSCS and SSPT to a randomly selected 72 Upper Basic Two students of an upper basic school which is not part of the schools selected for this study. After 4 weeks of 30 periods of teaching, the SSSCS and SSPT were administered with the help of the research assistants. The data collected were used to determine the internal consistency of the instruments. Cronbach Alpha was used to ascertain the reliability index of SSSCS. This gave reliability values of 0.86. Kuder-Richardson

(KR-21) formula was used to test internal consistency of SSPT. The instrument (SSPT) gave reliability value of 0.92. According to Maduabum (2011), the coefficients of 0.50-0.99 indicate that the instruments are reliable.

During the main study, intact classes were assigned to experimental and control groups. Thereafter, Social Studies Self-Confidence Scale (SSSCS) and Social Studies Performance Test (SSPT) were administered as pre-test by the social studies teachers that served as research assistants. This lasted for one week before actual teaching commences. During lessons, the teachers taught the experimental group I social studies topics using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) instructional strategy in line with lessons procedure prepared by the researcher and the experimental group II were taught using Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) instructional strategy in line with lessons procedure prepared by the researcher. The control group were also taught the same social studies topics using the discussion lesson plans. This lasted for five weeks. At the end of these

actual teaching periods, the pre-SSSCS and pre-SSPT were reshuffled and administered as post-test which lasted for one week and the post-test was marked by the research assistants using the marking scheme developed by the researcher. The pre-test score constituted the covariant of the post-test scores. Descriptive statistics of mean and standard deviation scores were used to answer the research questions, while the inferential statistic of Analysis of Covariance (ANCOVA) was used to test the null hypotheses at 0.05 level of significance.

## 7. Results

Presentations in this section are based on research questions and null hypotheses.

### 7.1 Research Question One

What are the mean self-confidence ratings difference among students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA), Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategies and discussion method? The answer to research question one is presented on Table 1.

**Table 1.** Mean self-confidence and standard deviation scores of students taught social studies using PEDDA strategy, IEPT strategy and discussion method

Group	N	PRE- SSSCS		POST- SSSCS		Mean Gain within Group
		$\bar{x}$	$\delta$	$\bar{x}$	$\delta$	
PEDDA strategy	95	1.37	0.21	3.86	0.15	2.49
Discussion	96	1.35	0.18	2.23	0.22	0.88
Mean diff. between Groups		0.02		1.63		1.61
IEPT strategy	97	1.35	0.17	3.77	0.20	2.42
Discussion	96	1.35	0.18	2.23	0.22	0.88
Mean diff. between Groups		0.00		1.54		1.54
PEDDA strategy	95	1.37	0.21	3.86	0.15	2.49
IEPT strategy	97	1.35	0.17	3.77	0.20	2.42
Mean diff. between Groups		0.02		0.09		0.07

Source: Field Survey, 2023.

Table 1 reveals the mean self-confidence ratings and standard deviation scores difference among students taught social studies using PEDDA strategy, IEPT strategy and discussion method (DM) on a paired comparative basis. The data in Table 1 show that the overall mean difference between students in PEDDA and DM groups

was 1.61 in favour of PEDDA. This implies that students in PEDDA group had higher self-confidence than students in DM group. Similarly, the overall mean difference between students in IEPT and DM groups was 1.54 in favour of IEPT strategy. This implies that students in IEPT group had higher

self-confidence than those in DM group. In the same vein, the overall mean difference between students in PEDDA and IEPT groups was 0.07. This difference though small is in favour of PEDDA strategy. This implies that students in PEDDA group had slightly higher

self-confidence than their counterparts in IEPT group. Meanwhile, students taught using IEPT strategy had higher self-confidence than those taught using discussion method. The summary of the mean self-confidence rating for the groups is shown in Figure 1.

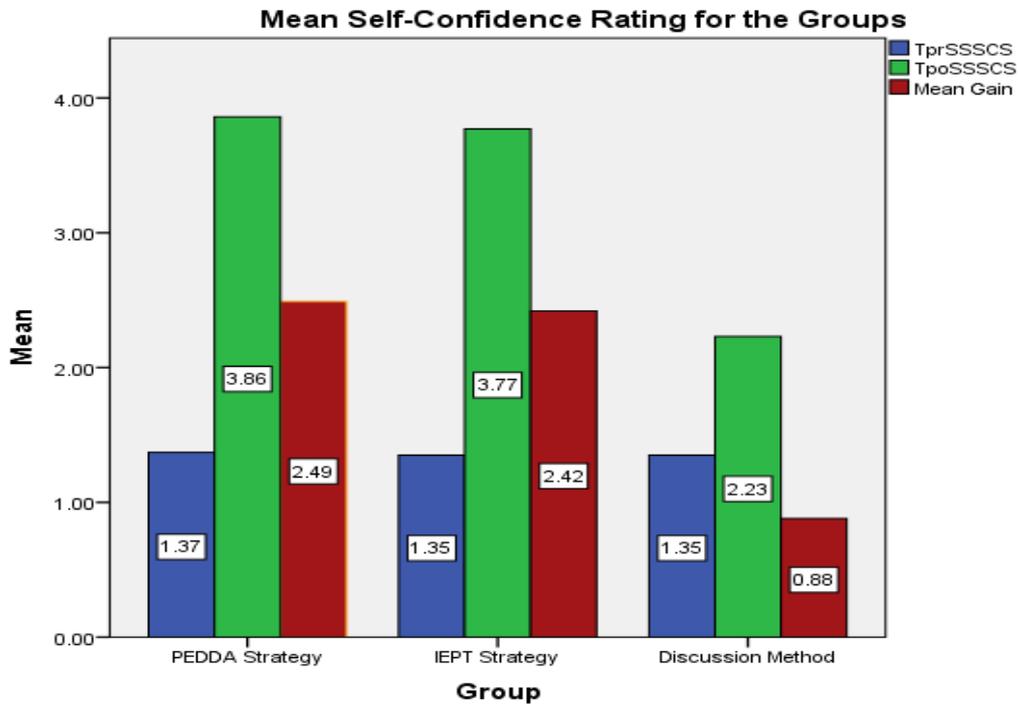


Figure 1. Pretest, Posttest, and Mean Gain Scores of Self-Confidence Rating for the Groups

7.2 Research Question Two

What are the mean academic performance scores difference among students taught social

studies using PEDDA, IEPT strategies and discussion method? The answer to research question two is presented on Table 2.

Table 2. Mean academic performance and standard deviation scores of students taught social studies using PEDDA strategy, IEPT strategy and discussion method

Group	N	PRE- SSPT		POST- SSPT		Mean Gain within Group
		$\bar{x}$	$\delta$	$\bar{x}$	$\delta$	
PEDDA strategy	95	8.21	1.57	25.23	2.78	17.02
Discussion	96	8.18	1.99	14.46	3.12	6.28
Mean diff. between Groups		0.03		10.77		10.74
IEPT strategy	97	8.21	1.42	21.81	2.71	13.60
Discussion	96	8.18	1.99	14.46	3.12	6.28
Mean diff. between Groups		0.03		7.35		7.32
PEDDA strategy	95	8.21	1.57	25.23	2.78	17.02
IEPT strategy	97	8.21	1.42	21.81	2.71	13.60
Mean diff. between Groups		0.00		3.42		3.42

Source: Field Survey, 2023.

Table 2 reveals the mean academic performance and standard deviation scores difference among students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) strategy, Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy and discussion method (DM) on a paired comparative basis. The data in Table 2 show that the overall mean academic performance difference between students in PEDDA and DM groups was 10.74 in favour of PEDDA. This implies that students in PEDDA group had higher academic performance than students in DM group. Similarly, the overall mean academic performance difference between students in IEPT and DM groups was 7.32 in

favour of IEPT strategy. This implies that students in IEPT group had higher academic performance than those in DM group. In the same vein, the overall mean difference between students in PEDDA and IEPT groups was 3.42. This difference though small is in favour of PEDDA strategy. This implies that students in PEDDA group had slightly higher academic performance than their counterparts in IEPT group. In conclusion, students taught using PEDDA strategy had slightly higher academic performance than those taught using IEPT strategy. Meanwhile, students taught using IEPT strategy achieved higher than those taught using discussion method. The summary of the mean academic performance scores for the groups is shown in Figure 2.

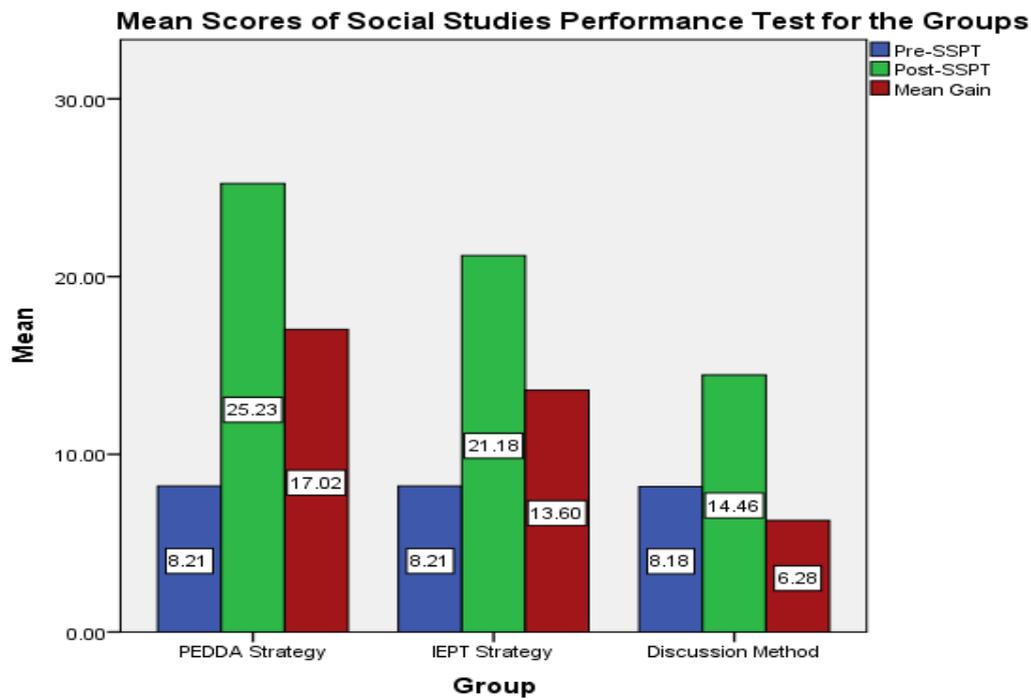


Figure 2. Pretest, posttest, and mean gain scores for academic performance for the groups

7.3 Hypothesis One

There is no significant difference in the self-confidence ratings of students taught social

studies using PEDDA, IEPT strategies and discussion method. The answer to hypothesis one is presented on Table 3.

Table 3. Two-way ANCOVA for mean self-confidence ratings of students taught social studies using PEDDA strategy, IEPT strategy and discussion method

Source	Type III sum of squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	160.931 <sup>a</sup>	6	26.822	723.106	.000	.939
Intercept	56.892	1	56.892	1533.790	.000	.845
TprSSCS	.001	1	.001	.016	.901	.000

Group	159.207	2	79.603	2146.076	.000	.939
Gender	.082	1	.082	2.220	.137	.008
Group * Gender	.011	2	.005	.142	.868	.001
Error	10.423	281	.037			
Total	3283.959	288				
Corrected Total	171.354	287				

a. R squared = .939 (Adjusted R Squared= .938).

Source: Field Survey, 2023.

Table 3 presents the two-way ANCOVA result for mean self-confidence ratings of students taught social studies using PEDDA strategy, IEPT strategy and discussion method (DM). The data in Table 3 reveal that the observed mean difference in the self-confidence ratings among the groups was significant [ $F_{2, 287} = 2146.076$ ,  $P < 0.05$ ]. Hence, the null hypothesis that there is no significant difference in the mean self-confidence ratings of students taught social studies using PEDDA strategy, IEPT strategy

and DM was rejected. This implies that there is a significant difference in the mean self-confidence ratings among the groups. Meanwhile, the effect size was 0.939 as indicated by the corresponding partial eta squared value is considered as large effect size. This implies that, 93.9% of the difference or variance in the self-confidence ratings among the groups was explained by the treatments. Hence, the difference in the self-confidence ratings among the groups has a large statistical effect size.

**Table 4.** Bonferroni post hoc comparison for mean self-confidence ratings of students' taught social studies using PEDDA, IEPT and DM

(I)	(J)	Mean Difference (I-J)	Std. Error	Sign.
Group	Group			
PEDDA	DM	1.626*	.028	.000
IEPT	DM	1.540*	.028	.000
IEPT	PEDDA	-.085	.028	.008

Source: Field Survey, 2023.

Table 4 shows Bonferroni post-hoc comparison for mean self-confidence rating of students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) strategy, Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy and discussion method (DM). The results reveal that the mean difference (I-J) between PEDDA and DM is 1.626\* and this is significant at  $p < 0.05$ . This implies that there is a significant difference in the mean self-confidence rating between the students taught social studies using PEDDA and those taught using DM in favour of students in PEDDA class. Likewise, the results reveal that the mean difference (I-J) between IEPT and DM is 1.540\* and this is significant at  $p < 0.05$ . This implies that there is a significant difference in

the mean self-confidence rating between the students taught social studies using IEPT and those taught using DM in favour of students in IEPT strategy class. However, the paired comparison of IEPT and PEDDA showed a mean difference of -.085 and this is not significant at  $p > 0.05$ . This indicates no significant difference in the mean self-confidence rating between students taught using PEDDA and IEPT strategies.

#### 7.4 Hypothesis Two

The difference in the academic performance scores of students taught social studies using PEDDA, IEPT strategies and discussion method is not statistically significant. The answer to hypothesis two is presented on Table 5.

The difference in the mean academic

performance scores of students taught social studies using PEDDA, IEPT strategies and discussion method is not statistically significant.

**Table 5.** Two-way ANCOVA for mean academic performance scores of students taught social studies using PEDDA, IEPT and discussion method

Source	Type III sum of squares	<i>df</i>	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5980.139 <sup>a</sup>	6	996.690	128.600	.000	.733
Intercept	4723.768	1	4723.768	609.496	.000	.684
TprSSPT	.455	1	.455	.059	.809	.000
Group	5802.793	2	2901.396	374.360	.000	.727
Gender	70.024	1	70.024	9.035	.003	.031
Group * Gender	108.840	2	54.420	7.022	.001	.048
Error	2177.829	281	7.750			
Total	129067.000	288				
Corrected Total	8157.969	287				

a. R squared = .733 (Adjusted R Squared= .727).

Source: Field Survey, 2023.

Table 5 presents the two-way ANCOVA result for mean academic performance scores of students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) strategy, Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy and discussion method (DM). The data in Table 18 reveal that the observed mean difference in the academic performance scores among the groups was significant [ $F_{2, 287}=374.360$ ,  $P<0.05$ ]. Hence, the null hypothesis that there is no significant difference in the mean academic

performance scores of students taught social studies using PEDDA strategy, IEPT strategy and DM was rejected. This implies that there is a significant difference in the mean academic performance scores among the groups. Meanwhile, the effect size was 0.727 which is considered as large effect size. This implies that, 72.7% of the difference in the academic performance scores among the groups was explained by the treatments. Hence, the difference in the academic performance scores among the groups has a large statistical effect size.

**Table 6.** Bonferroni post hoc comparison for mean academic performance scores of students' taught social studies using PEDDA, IEPT and DM

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sign.
PEDDA	DM	10.857*	.405	.000
IEPT	DM	7.293*	.402	.000
IEPT	PEDDA	-3.564*	.404	.000

Source: Field Survey, 2023.

Table 6 shows Bonferroni post-hoc comparison for mean academic performance scores of students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA)

strategy, Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy and discussion method (DM). The results reveal that the mean difference (I-J) between PEDDA and DM is 10.857\* and this is

significant at  $p < 0.05$ . This implies that there is a significant difference in the mean academic performance scores between the students taught social studies using PEDDA and those taught using DM in favour of students in PEDDA class. Likewise, the results reveal that the mean difference (I-J) between IEPT and DM is 7.293\* and this is significant at  $p < 0.05$ . This implies that there is a significant difference in the mean academic performance scores between the students taught social studies using IEPT and those taught using DM in favour of students in IEPT strategy class. However, the paired comparison of IEPT and PEDDA showed a mean difference of -3.564 and this is significant at  $p < 0.05$ . This indicates that there is a significant difference in the mean academic performance scores between students taught social studies using PEDDA and IEPT strategies in favour of students in PEDDA class.

### 8. Discussion of Findings

Finding of this study revealed that the difference in the self-confidence rating among upper basic students taught social studies using Prior-conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA), Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) and discussion method was statistically significant. The post-hoc comparison for the self-confidence scores among the groups revealed that upper basic students taught social studies using PEDDA had significantly higher self-confidence than their counterparts taught using discussion method. Though, there was scarcity of studies on effect of PEDDA strategy on students' self-confidence in social sciences subjects before. But this finding is in line with Okechukwu and Kemi (2019) findings that PEDDA enhanced significantly students' conception of energy and society in senior secondary school physics than conventional teaching method. Thus, the likely explanation for this outcome may also be connected to the fact that the use of PEDDA strategy provides a format for students to see how knowledge is developed through the process of reflecting on what they know and the investigation they undertake thereby enhancing students' confidence about his/her ability to solve social studies related problems compared to discussion method that only promotes passive learning.

The post-hoc comparison for the self-confidence rating among the groups also revealed that

students exposed to Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy had significantly higher self-confidence than those taught using discussion method. Though, there was scarcity of studies on effect of IEPT strategy on students' self-confidence in social science subjects before. This finding is in line with Adamu (2016) and Ugwu (2016) findings that students improved significantly in their attitudes and learning outcome in commerce and social studies respectively when taught using IEPT strategy compared to those taught using conventional teaching method. Thus, the likely explanation for this outcome may be attributed to the fact that, in an IEPT instruction, student's active participation are emphasizes in the learning process through exploration, problem solving, and discussion compared to discussion method that the problem may not be clear to all members of the class.

It was also found that students exposed to Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) had slightly higher self-confidence than their counterparts using Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy but the post-hoc comparison for the self-confidence rating among the groups further revealed that the difference in the self-confidence rating between students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) and those taught using Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy was not statistically significant. There was scarcity of studies on comparison between PEDDA and IEPT strategies on students' self-confidence in social studies before. However, the likely explanation for this outcome may be attributed to the fact that both PEDDA and IEPT strategies are used to help students develop a cognitive structure that enable students to understand the structure of knowledge and process of knowledge construction, thereby enhancing students' self-confidence.

Finding of this study revealed that the difference in the academic performance scores among students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA), Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy and

discussion method was statistically significant. The post-hoc comparison for the academic performance scores among the groups revealed that students taught social studies using PEDDA achieved significantly higher than their counterparts taught using discussion method. This is in line with Okotcha (2018) and Okechukwu and Kemi (2019) findings that students improved significantly in their retention and conceptual understanding in electrochemistry and Physics respectively when taught using PEDDA strategy compared to those taught using conventional teaching method.

In another related study, Peter (2016) investigated the effect of Prior-conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) on students' achievement in social studies. The finding of study revealed that, PEDDA significantly enhanced students' achievement than traditional teaching method. The likely explanation for this outcome may be connected to the fact that the PEDDA strategy helped the learners to possess a meaningful in-depth knowledge of the content area by finding out their initial ideas and motivating them to want to explore the concept and generate investigation when compared to the discussion method. PEDDA strategy helps students to learn meaningfully because it focuses on linking students existing ideas and beliefs relevant to a situation and exploring the appropriateness of these ideas and beliefs.

The post-hoc comparison for the academic performance scores among the groups also revealed that students taught social studies using Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy achieved significantly higher than their counterparts taught using discussion method. This finding agrees with Magana (2018) who found that students taught social studies in Public Secondary Schools in Kenya using IEPT strategy had higher academic performance than those taught using traditional teaching method. Similarly, this is in line with Ugwu (2016), Olajide (2017) and Adeosun and Mobolaji (2018) findings that students improved significantly in their interest and learning outcomes in Home Economics and social studies respectively when taught using IEPT strategy compared to those taught using lecture method. The likely explanation for this outcome may also be connected to the fact that the use of IEPT strategy allows students to develop learning

experience through hands-on environment or exploration. Unlike, when compared to discussion method that may degenerate into mere talk and may be monopolized by few individuals.

The post-hoc comparison for the academic performance scores among the groups further revealed that the difference in the academic performance scores between students taught social studies using Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) and those taught using Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy was statistically significant. There was a scarcity of studies on comparison between PEDDA and IEPT strategies on students' academic performance in social science subjects before. However, the likely explanation for this outcome may be attributed to the fact that, PEDDA strategy is used to help students develop a cognitive structure that enable meaningful learning. PEDDA instructional strategy enables students to understand the structure of knowledge and process of knowledge construction. In PEDDA classroom, students can see how knowledge is developed through the process of reflecting on what they know, undertaking investigation and comparing their new knowledge gained with prior conception and applying these ideas to a new situation. Unlike, when compared to IEPT strategy that only allows students to construct knowledge through exploration of activities and evaluation of the results of these activities without any deep emphasis on their prior conception about the concept.

## 9. Conclusion

It is evident from the findings of this study that the use of Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) strategy and Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy enhanced students' self-confidence in social studies than the use of discussion method. The results of the study also provide empirical evidence that the use of PEDDA strategy enhanced students' academic performance in social studies than IEPT strategy and discussion method. It was also found that IEPT strategy enhanced students' academic performance in social studies than discussion method.

## 10. Recommendations

Based on the findings and conclusion of this study, the following recommendations were made:

- 1) To maximize self-confidence in social studies class, teachers' trainee should be train on the application of Prior-Conception, Exploration, Discussion, Dissatisfaction and Application (PEDDA) strategy and Invitation, Exploration, Proposing-Explanation and Taking action (IEPT) strategy and serving teachers should employ the use of PEDDA and IEPT strategies in teaching social studies.
- 2) Social studies teachers are encouraged to use PEDDA strategy in teaching to enhance students' academic performance in social studies; since, PEDDA strategy was found to be more effective in terms of enhancing students' academic performance in social studies than the use of IEPT strategy and discussion method respectively.

The curriculum developers should use PEDDA and IEPT strategies to develop and refine the social studies curriculum.

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