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Effective Student-Centred Pedagogy: Effect of the Devil's Advocate Approach and Moderating Influence of School Location on Social Studies Students' Learning Outcomes

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The study investigated the effectiveness of the Devil's Advocate (DA) approach and the moderating influence of school location on social studies students' learning outcomes. The research employed a quasi-experimental approach featuring pretest and posttest assessments, including a control group and a 2x2 factorial framework. The sample comprised one hundred sixty-four (164) upper basic eight Social Studies students selected from four (4) schools. The research utilised the Social Studies Learning Outcomes Test (SSLOT) as the data gathering instrument. The mean was used to examine the study questions, while an Analysis of Covariance (ANCOVA) was performed to evaluate the hypotheses. The results indicated a substantial effect of the Devil's Advocate technique on the learning outcomes of Social Studies students; however, school location did not substantially affect the learning outcomes of students. Social Studies educators are advised to adopt the DA methodology to promote interactive learning and enhance educational outcomes. Teachers of social studies should receive training from the government on how to use cutting-edge teaching approaches, such as the DA approach, in classroom settings. Furthermore, regardless of the school's location, the government should ensure the availability of enriched learning environments that foster not only academic skills but also social, creative, and emotional growth, thereby supporting the successful implementation of student-centred teaching approaches, such as the DA approach.

Introduction

Instructional delivery of Social Studies lessons is hindered by several factors, including insufficient instructional resources, unqualified Social Studies educators,

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overcrowded classrooms, inadequate teaching infrastructure/facilities, and the utilisation of inappropriate teaching approaches by Social Studies educators. Some scholars and Social Studies educators endorsed the implementation of innovative, outcome-focused, and student-centred methodologies such as cooperative learning, idea mapping, inquiry-based learning, small group instruction, Devil's Advocacy, and programmed instructions. Evidence indicates that traditional teaching approaches, such as the lecture method, continue to be employed in basic education for Social Studies(Obro, 2022). This approach renders students inactive and disinterested during the instructional process. To enhance pedagogical efficiency and improve social studies student learning and scholarship outcomes at the basic education level in Nigeria, it is crucial to adopt more innovative, effective, and suitable teaching approaches.

Research findings have identified inadequate teaching tactics and methodologies as contributing factors to the subpar learning outcomes of students in Social Studies (Balogun, 2013). In this case, considering the potential connection between students' learning outcomes in Social Studies and their teaching methods, Social Studies teachers and educators must develop and investigate an effective teaching approach that focuses on achieving specific learning goals to enhance students' understanding of Social Studies. Gambari, Al-Hajaya, and Al-Kresbeh (2014) argued that inadequate teaching approaches employed by teachers were a significant factor contributing to students' learning outcomes in Social Studies. Most educators tend to employ the lecture approach and occasionally rote learning, leading students to rely mostly on memorising concepts rather than achieving a comprehensive understanding of the subject matter.

The current pedagogical approach employed by educators appears to be discipline-centred and teacher-centred, resulting in passive surface learning among students (Loof, 2014). A significant amount of data suggests that discipline-centred education overlooks the needs, concerns, and expectations of both educators and learners, as the curriculum is primarily determined by the disciplinary subject matter to be taught. The material and the innovative instructional methodology must be considered when teaching social studies. Students' dismal exam results have prompted scholars to look into the underlying reasons for their poor learning outcomes and to seek teaching approaches for enhancing the educational process.

Students' learning outcomes in basic social studies have been subpar over the past few decades. This has generated extensive apprehension among educators and other stakeholders in the educational sector. Educators, guardians, and pupils aspire for enhanced academic performance in a conventional educational environment. Various elements contribute to students' learning outcomes. One issue is the instructional tactics educators employ and the students' capacity for critical thinking during the learning process. Educators employ instructional approaches to facilitate students' development as strategic learners. These methodologies transform into learning/teaching strategies when students autonomously select suitable methods and utilize them proficiently to achieve tasks or objectives. Instructional tactics can motivate pupils and aid in directing their attention. One can evaluate and gauge learning by structuring material for comprehension and retention. Akanbi and Kolawole(2014) asserted that students' learning outcomes success results from educational endeavours, reflecting the degree to which an individual or group in any academic setting has attained their educational objectives. These educational objectives are assessed by ongoing evaluations, tests, and similar approaches and are quantified in marks and scores, particularly in percentages. It relates to the pedagogical approach employed in the instruction and acquisition of knowledge in school disciplines, Social Studies inclusive. The aim of Social Studies teaching approaches, focusing on the Devil's Advocate (DA) teaching

approach, is to identify alternative teaching methods that effectively convey subject content, thereby enhancing teaching efficiency and socially acceptable student learning outcomes.

The lecture teaching approach has been a predominant instructional approach in educational settings. Misan-Ruppee, Obro, and Akpochafo (2023) asserted that the lecture teaching approach has long been the predominant instructional approach for imparting knowledge and communicating to pupils, achieving considerable popularity. As a way to teach, the teaching method is mostly about paying attention, taking notes, and remembering what you hear. The teacher employs the lecture teaching approach, similar to the expository approach, where students are given knowledge and information, suggesting they learn mostly passively. This is based on the idea that students' thoughts are tabula rasa, or blank slates that can be filled with knowledge, information, and ideas. Students and teachers can discuss more topics in less time, quickly gaining new information and knowledge directly from the source. However, students do not appear to be very involved in what they are learning (Obro, 2021). Since the lecture approach is ineffective for teaching Social Studies, it is necessary to investigate and create alternative pedagogical approaches that are more outcome-focused, student-centred, and creative. An effective instructional plan must specify the approaches to teaching the subject at the upper basic level. Instruction is effective only when the teaching approach is utilised positively and changes the learner's behaviour. Instruction must stimulate students' passion for the subject and enhance their examination outcomes.

To attain this essential objective, innovative and results-driven strategies must be employed. It is vital to recognise that an effective instructional strategy may yield poor results when implemented by an inadequately prepared teacher; conversely, a well-prepared teacher possesses a significant advantage in navigating challenges, even when other conditions are suboptimal (Nworgu, 2013). The instructional method employed by a teacher can either facilitate or obstruct the learning process. Teaching tactics, approaches, and learning outcomes have manifested as innovative, results-driven, and collaborative approaches, including idea mapping, inquiry-based learning, cognitive style assessments, cooperative learning, and small-group instruction(Obro & Enayemo, 2022).

The DA is a tactic that permits someone to express disapproval of the suggested choice. According to Cunico, Zimmermann, and Videira (2023), a DA role is usually played by someone who challenges conventional wisdom by offering different viewpoints and solutions to issues. Playing DA in the classroom refers to a teacher or student taking a stance that deviates from the consensus (Akhmad, Chang, & Deguchi, 2021). Regardless of whether it changes their opinions, using the DA strategy forces students to broaden their analysis, viewpoint, and comprehension of a subject. The efficacy of these instructional methods is assessed based on their ability to facilitate the primary goals of teaching students to evaluate the validity and soundness of arguments, investigate logic and assumptions, and achieve genuine comprehension (Ghafar, 2024). The DA method in the classroom promotes critical thinking among students through analysis, evaluation, and creation, as opposed to rote memorisation (Baziganya et al., 2024). Educators must be comfortable articulating and justifying perspectives they disagree with to employ this pedagogical approach.

The results of the available studies imply that the DA teaching approach is a very effective means for learners to master the content they have learned or are being taught. The review of related literature also showed that if learners are given an enabling environment to master the topics being taught by the teacher, the learning outcomes of students could be enhanced. Literature on DA indicates that the teaching approach impacts students' learning outcomes.

However, other studies have found no effect on these outcomes. Therefore, further research on DA is necessary to determine its impact on students' learning outcomes.
Existing literature has provided valuable insights into how the DA teaching approach affects students' learning outcomes. One significant gap is the lack of studies, to the best of the researchers' knowledge, that specifically focus on how DA affects students' learning outcomes. Most previous research has been conducted in different geographical locations or educational settings, making it essential to bridge this gap and understand the effectiveness of DA on students' learning outcomes in this specific region.While some studies have examined teaching approaches other than DA, there is a need to explore how DA affects students' learning outcomes in social studies, including how school location influences and interacts to shape students' learning outcomes.The inconsistencies in the research findings and the dearth of literature in Social Studies on the effects of the DA on students' learning outcomes, as well as the need to devise an effective student-centred pedagogy to enhance learning outcomes, stimulated this research. By addressing these research gaps, this study aims to contribute to a deeper understanding of how DA affects students' learning outcomes.

Concept of Devil's Advocate

As a teaching tool, DA has a long history that begins in classical Greece, with Aristotle, Sophists, and Protagoras as its initial proponents (Vo & Morris, 2006). The phrase Devil's Advocate originated in the 16th century within the Catholic Church, referring to the role opposing a candidate's perspective canonisation (Bicksler & Hannah, 2022). The premise was that enduring a formal examination indicated one merited sainthood (Encyclopaedia Britannica, 2020). The antecedents of DA, however, can be traced back to Plato's fictional depictions of Socrates challenging the perspectives of Athenian society members. Socrates would solicit a definition from his interlocutor rather than defending a particular stance, interrogating their assertions, ultimately denying the interlocutor's initial viewpoint (Giuseffi, 2021).

Devil's Advocate is a role wherein a debate member presents an opposing viewpoint and substantiates it with arguments to encourage others to reflect more critically on their beliefs (Bicksler & Hannah, 2022; Chun-Wei, Zhuoran, Zhuoyan, & Ming, 2024). The use of DA encourages other participants to develop, defend, and support their respective perspectives. It can also facilitate the creation of a learner-centred online classroom by granting participants authority over the discussion (He, 2024). Allowing participants to assume roles that typically contravene the standards of civil discourse, such as challenging and dissenting, facilitates the attainment of more profound levels of debate. DA may serve as a helpful instrument for fostering debates; nevertheless, considerations must be observed while implementing it in specific cultural contexts. As stated by Manchang, Padung, and Pofung (2022), typically, a person who challenges collective assumptions by presenting alternate perspectives and solutions to problems takes on the roles or functions of DA. In an educational context, taking the DA stance or position entails that a teacher or the student adopts the contrary stance to the prevailing argument. While it may not alter the students' opinions, employing the DA technique compels them to broaden their analysis, perspective, and comprehension of a topic.

The Lecture Approach

The lecture method, a form of direct instruction, is characterised by the teacher designing and adapting experiences to facilitate students' attainment of specific learning objectives. The lecture approach involves the asymmetric transmission of knowledge from the lecturer to the students. This method can be characterised as the chalk and speak approach,

with chalk representing the approach itself. The lecture approach prioritises the memorisation and recitation of knowledge that has been instilled in the students' minds by the instructor. The lecture approach has been scrutinised in educational literature due to the emergence of more innovative interactive alternatives (French & Kennedy, 2016).

In this teacher-centred approach, students are not required to think critically; instead, specific tactics are employed to capture learners' attention and encourage their participation. Some educators still rely on the "sage on the stage" lecture approach, which can make learning ineffective and cause students to lose interest in learning (Kramer, 2017). The following are the benefits and characteristics of the lecture approach, as stated by Okonkwo (2012). The lecture method is a valuable, effective, and dependable teaching approach for conveying many facts in a short period. Materials are supplied in a concise and organised manner, arranged or sorted in sequential order. It is very much teacher-focused. The teacher's instructions overshadow the teachings.

The lecture approach has many drawbacks and limitations, despite being a potent and effective teaching strategy. In some types of learning, the lecture technique will not result in maximum performance. For instance, it is challenging to teach cooperative group thinking, conversational skills, and hand skills using the lecture method. Students acquire the aforementioned types of skills more effectively through practice or by running through them. Additionally, conveying concepts effectively does not need the sole use of the lecture approach. It does not give teachers the ability to assess or evaluate students' progress prior to exams. The teacher could unintentionally provide children with more knowledge than they can handle. In general, the lecture approach leaves little room for students' participation. As a result, many students gladly allow the teacher to complete all the tasks.

Students' Learning Outcomes

Students' learning outcomes might be synonymous with academic accomplishment. The term "learning outcomes" describes the extent to which an educational programme, school, or individual has achieved its goals. Examinations or ongoing assessments typically evaluate learning outcomes; however, there is no consensus on the most effective testing methods or the relative importance of procedural knowledge, such as skills, declarative information, facts, etc. The information and aspects being assessed determine the learning outcomes, which reflect the individual's level of achievement on learning tasks, whether high or low (Stumm, Sophie, Hell, & Thomas, 2011). Learning outcomes denote the extent of an individual's achievements following a course of education or training. In an academic context, it may be assessed by the student's score compared to peers in class tests or examinations (Ogbeide, 2013).

Studies on Devil's Advocate and Student Learning Outcomes

Studies indicate that the DA strategy and related activities positively influence students' learning outcomes. Zare and Othman (2013) corroborate prior studies demonstrating that structured debate participation substantially enhances students' learning outcomes. Afri, Marpaung, and Maulina (2021) and Baziganya et al. (2024) discovered that engaging in English debates markedly enhanced students' speaking abilities, including fluency, correctness, and complexity. The research conducted by Darma (2018) indicated that the DA technique improved the learning outcomes of Social Studies students. Akhmad, Chang, and Deguchi (2021) evaluated the DA as a countermeasure against groupthink. The study's results indicated that DA influenced students' learning outcomes. In other words, endorse the

application of the DA approach to mitigate groupthink. Al-Badani andAlmuslimi (2023) and Baziganya, Mitari, Uwamariya, and Ngoboka (2024) investigated the influence of argument in improving English speaking skills. The research indicated that debating activities markedly enhanced students' English-speaking abilities, encompassing fluency, vocabulary, and critical thinking skills.

Debate activities enhance students' confidence in public speaking and their self-expression capabilities (Aulia & Apoko, 2022). Odesa and Ogheneakoke (2023) examined the efficacy of the DA approach on students' learning outcomes. The results indicated that the DA technique was beneficial, as it enhanced students' learning outcomes when implemented. Cunico et al. (2023) examine the function of novel DA in enhancing modelling processes. The research illustrated the efficacy of the DA approach. Ghafar (2024) investigated the impact of DA on students' learning results in the classroom. The findings demonstrated that the DA strategy improved students' learning outcomes. Research by Mahlangu (2017) found that non-native English-speaking high school pupils in South Africa did not benefit as much from debate as native English-speaking students did in improving their speaking talents.

School Location and Learning Outcomes

Agbaje and Omotade (2014) conducted a study on school location and students' learning outcomes. The study indicated that school location did not significantly impact students' learning outcomes. Bamidele and Adekola (2017) identified a considerable disparity in students' learning outcomes by school location. Ntibi and Edoho (2017) discovered no significant impact of school location on student learning results. Essien (2017) explored the effect that the location of a school has on the education outcomes of students. The study found that students' learning outcomes were unaffected by their educational institution's geographical location. Adebayo, Daniel, and Oladipupo (2018) examined the school location on student learning results. The research indicated that the geographical location of their school did not influence pupils' learning outcomes. The learning outcomes of Home Economics students did not exhibit any significant variation based on school location, as per the results of the study. Akpomudjere (2020) examined the impact of a school's location on the grades of 2,579 Business Studies students, finding that geography does not significantly influence academic performance. Ovat, Nwogwugwu, and Idika (2021) demonstrated in their study that urban students intellectually surpassed their rural counterparts. Abamba (2021) revealed no substantial variation in student learning outcomes among urban and rural students.

Study Theoretical Model

Cognitive constructivism, as proposed by Vygotsky in 1978, served as the theoretical foundation for this investigation. There is an element of DA in his writing. This study is well-suited to the cognitive constructivist learning experience. Not only does one take in data, according to Vygotsky, but one also absorbs the underlying cognitive processes of the message. There are two occurrences of the learning-related components of the child's growth. Vygotsky proposed that pupils are more likely to enter a new reaction of potentials when they solve problems in a collaborative spectrum, first on the social level and then on the individual level. He dubbed these emerging domains a Zone of Proximal Development (ZPD), which he believed to be the frontier of children's cognitive development. Vygotsky argued that to facilitate internalised, long-term cognitive development, peer interaction in learning is crucial. A youngster develops this ZPD through fruitful, thought-provoking interactions with an older, more seasoned mentor.

For Vygotsky, the best way for students to learn is through direct instruction, when a more experienced teacher or peer helps them out by providing "Scaffolding" in the ZPD. With the use of telling, asking, hinting, demonstrating, drawing attention to, encouraging, and reminding, the less capable learner can be helped through the process of scaffolding. Similarities between this theory and the devil's advocate educational technique are numerous; under this model, students work in groups to achieve a common objective and receive rewards as a class. The ZPD is where, according to Vygotsky (1987), students learn best. This area includes activities that a youngster cannot handle on their own but can do with the help of an adult or a more experienced peer. When it comes down to it, Vygotsky's theory is based on the premise that each learner's ZPD is influenced by the social interaction that occurs as a result of scaffolding by both adult and peer experts. This is an intrinsic part of playing DA in the classroom. It starts with the premise that knowledge is not static but instead undergoes constant change and evolution. A person's cognitive construction of reality through their actions is the ultimate cause of education, say those who advocate for it. He views experience more as a journey towards knowing than as a fixed or assured entity.

The basic tenet of constructivism, a theory of learning, is that students should be required to discover and personalise their contexts in which to apply complicated information. Starting from this assumption, learning is reframed as creating new knowledge instead of just acquiring it. Constructivism allows students to find and use their ideas, develop self-awareness of their learning processes, and have meaningful and relevant learning experiences. To sum up, constructivism is a theory of education and learning that places a premium on students' personal development and the significance of cognitive conflict as a learning tool. This will continue to happen so long as there is new knowledge for learners to absorb.

The acquisition of knowledge commences with the assimilation of novel elements through environmental contact; these elements are subsequently evaluated against existing beliefs. The educator functions primarily as a facilitator of learning and a mediator. The instructional method acts as a fundamental catalyst for promoting student learning across all levels.The theory is modified in this study to the extent that the strategies (Devil's Advocate approach and control condition (lecture approach) constituted the independent variables, while the dependent variable in the study is the learning outcomes in Social Studies. The moderating variable is school location. The information is illustrated in the model in Fig. 1.

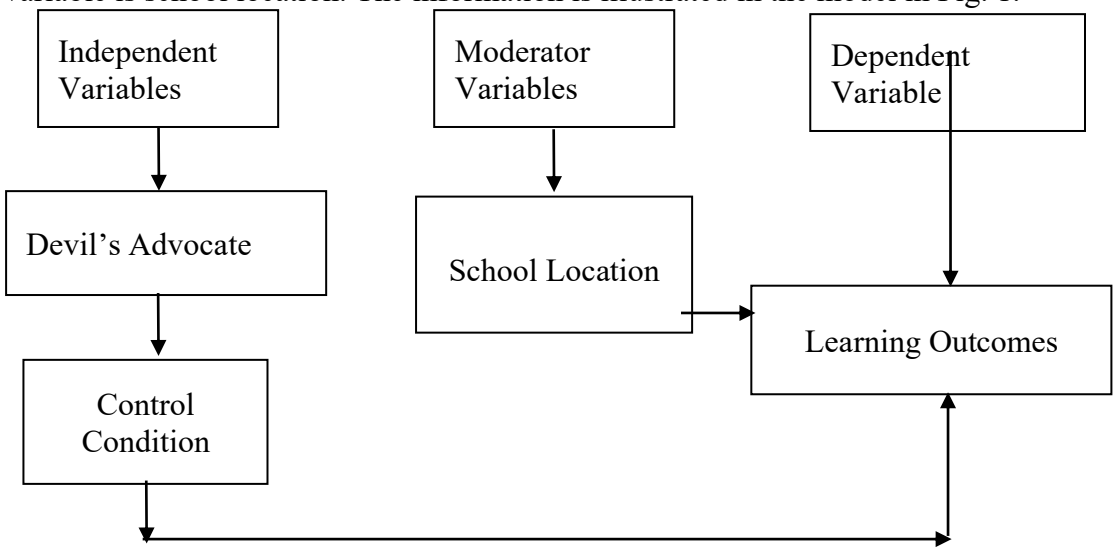

Figure. 1: Theoretical Model

Research Questions

- Does the DA technique affect Social Studies students' learning outcomes?
- Does the school location affect Social Studies students' learning outcomes when exposed to the DA teaching approach?

Hypotheses

- The DA method has no substantial effect on Social Studies students' learning outcomes.
- The school location has no substantial impact on Social Studies students' learning outcomes when exposed to the DA approach.
- Teaching approach and school location will not interact to affect Social Studies students' learning outcomes substantially.

Method

Research/Study Design

The study is a quasi-experiment design with pretest and posttest measures, incorporating a control group and a 2x2 factorial structure. The design incorporates treatments (education) at two levels (devil's advocate and lecture approaches) and school location at two levels (urban and rural) for pupils. This approach was deemed suitable due to the unbroken classrooms and the inflexible school schedule that precluded the randomisation of participants/subjects. The approach allowed the researcher to assign students to experimental and control groups according to their intact classrooms. The quasi-experimental design allowed for intentional control and manipulation of the independent variables or learning circumstances to a certain degree. The DA served as the experimental/treatment group, whereas the lecture approach functioned as the control group. The experimental group consisted of students taught using the devil's advocate method; in contrast, students in the control group received instruction through lectures. This method was implemented as it facilitates the distinct assessment of the primary effects of the independent and mediating variables on students' learning outcomes (dependent variables).

However, the quasi-experimental design has some limitations or shortcomings. There is a higher chance of selection bias because the participants are not chosen at random. In other words, the groups being compared might have significant differences that could have changed the result even before the intervention. This makes it difficult to determine whether the observed changes are due to the surgery or the existing differences. If groups are not assigned at random, it can lead to selection bias, where they are different in essential ways from the start. This makes it difficult to distinguish the intervention's effect from other factors that may influence the results. This makes it less likely that a result is caused by something else, and it may also make it harder to use the results in other situations or with other people.

Participants

The sample size consisted of one hundred sixty-four (164) upper basic eight Social Studies students, drawn from four (4) schools in Delta State, Nigeria. The four institutions were chosen utilising the multistage sampling process. The schools were first categorised into Local Government Areas. Subsequently, four (4) local government areas were randomly chosen utilising basic random sampling. Two (2) were selected from urban centres and two (2) from rural centres.

Power analysis was conducted to support the adequacy of the sample size of 164 students. The required sample size to determine an effect on learning outcomes, specifically students' learning outcomes scores, was based on an 80% power with alpha levels set at $p < 0.05$. Based on previous research, an effect size of d 1/4 0.5 (adjusted mean difference of 0.25) was expected for the study on student learning outcomes. An adjustment was made in the power calculation utilizing a correction factor of (1þ (m – 1) × ICC), where m represents the number of students per school and ICC denotes the intra-class correlation coefficient. Assuming that forty-one students from each of four schools are to be engaged, with an ICC of 0.07, a correction factor of 1.5 is calculated as follows: 1.5 [1 þ (41 – 1) × 0.07. The required sample size was determined to be 164 students from four schools.

Data Collection

The data collection instrument employed in the study is the Social Studies Learning Outcomes Test (SSLOT). The instrument comprised twenty-five (25) multiple-choice items derived from previous Basic Education Certificate Examination (BECE) questions, addressing the following subjects: the concept of crime, the concept of law enforcement, harmful traditional practices, human emotions, and population and family life education. The Social Studies Learning Outcomes Test (SSLOT) consisted of two portions, A and B. Portion A collected students' demographic data, including their school's name and location (urban or rural). Section B comprises twenty-five multiple-choice items/questions. The responders were instructed to choose the most appropriate alternative from choices A to E that accurately addresses the question presented in each item. Each test item received four (4) points for a correct response and zero (0) points for an incorrect answer.

Validity of the Instrument

The instrument's face and content validity were both proven. The validity was based on a specification table and expert judgment. To ensure the items were compatible with the specification table, validation was performed to confirm that the articles addressed the subject matter as well. Face validation was used to ensure that the items measured the things they were supposed to measure. Two specialists in test and measurement validated the instrument. Additionally, two seasoned secondary school educators were approached to evaluate the 25 items in the SSLOT. Their knowledge was applied to evaluate the clarity of the items in the test. They were content with the items, particularly as responses were given. Consequently, their recommendations and observations were integrated to enhance the content of the Pretest – Posttest SSLOT.

Instrument Reliability

To establish the reliability of the instrument, the researcher administered a pilot test to 30 students from outside the study area, who had similar characteristics to those chosen for the study. The calculated Kuder-Richardson 21 (KR-21) reliability coefficient was 0.70. This means that the instrument yielded scores that were stable over time and therefore suitable for thisstudy. Thus, showed that the instrument was adequately reliable.The Kuder-Richardson 21 (KR-21) reliability coefficient of 0.70 indicates a satisfactory level of reliability for the test items. This result suggests that the test items were well-aligned and that variability in scores can largely be attributed to differences in students' abilities rather than inconsistencies in the test itself.Given this reliability score, the instrument was deemed satisfactory for practical use, particularly in educational assessments where some degree of variability is expected, and it

demonstrated that the test provides a reliable result, making it suitable for drawing valid conclusions about the students' learning outcomes.

The initial step in the treatment procedure involved the allocation of students into two groups: the Devil's Advocate approach (experimental group) and the lecture method (control group). Equally, the experimental and control groups were subjected to identical Social Studies ideas. The experimental group received teaching through the DA approach, while the control group was instructed using the lecture approach.

Four regular Social Studies instructors in the chosen schools functioned as research helpers/assistants. Two instructors employed the devil's advocate approach, while two others used the lecture approach. The educators received training on the study's objectives to ensure consistency and proficiency in the teaching methodologies behind the research, allowing them to implement the procedures effectively. The researcher instructed the research assistants in experimental schools on how to organise pupils into DA groups of three or four, depending on class size. The researchers emphasised the need to monitor students throughout the procedure, serving as facilitators in the experimental group and providing timely feedback as appropriate.

Following the completion of the training of the research assistants for both the experimental and control groups, the researcher disseminated copies of the comprehensive instructional packages. These packages had four instructional modules in addition to auxiliary resources such as charts, textbooks, and models. One week before the start of the therapy, a pretest was given to students who were a part of both the experimental group and the control group. The therapy spanned four weeks. Throughout this time/period, the research assistant adhered to the established instructional protocols that were assigned for the therapy with great consideration. Individuals in both the experimental and control groups were given the same test once more during the fourth week (posttest), which was the same test that had been given previously.

Instructional guide/implementation process of the DA teaching approach (Treatment)

(1) Step 1: The Teacher splits the whole class/group into two (2) subgroups of students. Students in subgroup 1 make recommendations, while students in subgroup 2 critique the recommendations made by students in subgroup 1.
(2) Round 1: Students in subgroup 1 talk and develop recommendations, while students in subgroup 2 talk and develop critiques
(3) Round 2: Students in subgroup 1 present recommendations, while students in subgroup 2 critique the recommendations made by students of subgroup 1.
(4) Round 3: Students in subgroup 1 take the round one critique into account, discuss, and develop recommendations. Meanwhile, students in subgroup 2 discuss and develop further critiques, considering the first set of recommendations.
(5) Round 4: Students of subgroup 1 present recommendations, while students of subgroup 2 critique recommendations.
(6) Subsequent Rounds Continue until both groups accept the Recommendations, Assumptions, data, and so on.
(7) The entire groups accept the Recommendations, Assumptions, data, etc., and writes down the final recommendations for solving the problem.
(8) Debriefing: After the process, the teacher facilitates a discussion where students/learners reflect on the arguments/critiques presented, the challenges encountered, and the insights gained.

(9) Evaluate learning: The teacher assesses students' comprehension of the topic, their ability to analyse arguments/critiques, and their capacity for critical thinking.

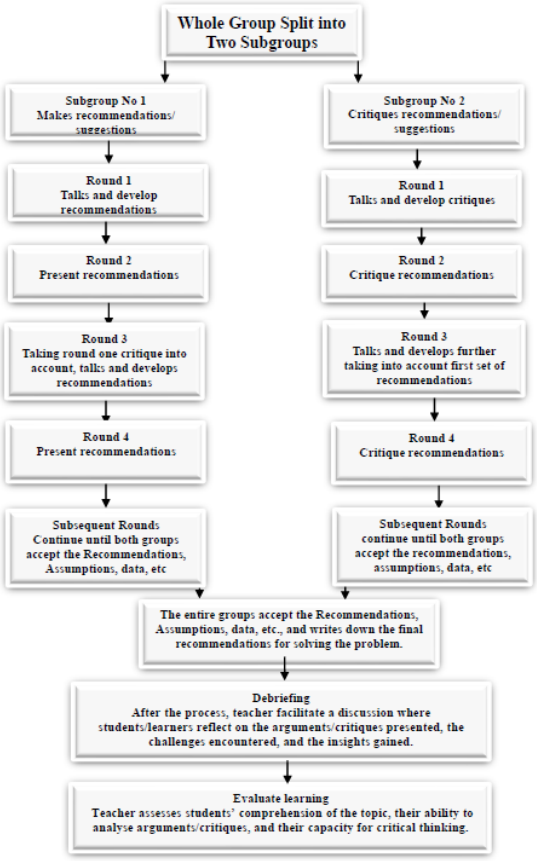

Figure. 2: Visual Presentation of the Step-by-Step Implementation Process of the DA Teaching Approach (Adapted from Hartwig, 2010)

Instructional Guide for the Lecture Teaching Approach (Control)

(1) Step 1: Introduction of the Session- Teacher writes the topic on the board and pronounces the topic (Crime) to the students. 2 minutes
(2) Step 2: Warm-Up: Give a warm-up activity for at least 2 minutes. This will help students become accustomed to the excitement that can occur during lecture sessions. This activity should focus on a natural subject matter that encourages students to be creative. This is through probing students' recall of issues through questioning.
(3) Step 3: Lesson Development: This is the lesson proper. Set a time limit of 20 to 25 minutes. It is sometimes effective to call time and then allow 5 more minutes. The teacher explains the topic through explanation and discussion, defining crime, listing its types, and explaining its effects on society. Meanwhile, the students/learners listen to the explanation of crime, its types, its effects, and potential solutions to the surge in crime in society.
(4) Step 4: Teacher makes the topic real by giving practical examples of the topic- using instructional resources to depict crime scenes, crimes of various types, and so on. 5 minutes

(5) Step 5: Evaluation: The teacher evaluates learners by asking them questions related to the topic taught in the lesson, such as "What is crime?" List the types of crime. What are the effects of crime on society. 5 minutes.

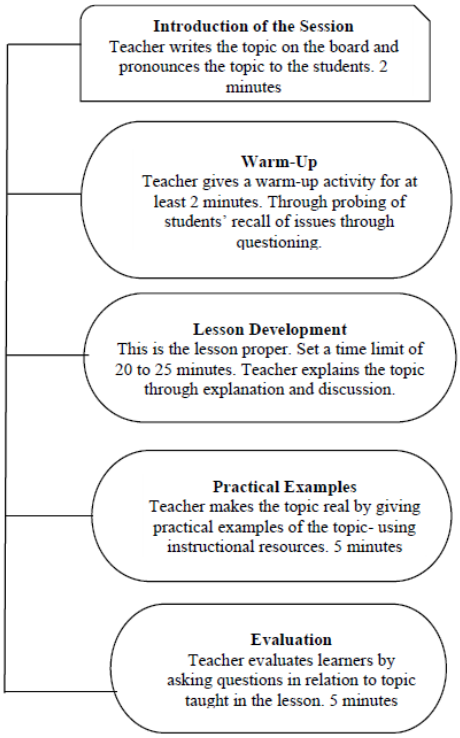

Figure. 3: Visual Presentation of the Step-by-Step Process of the Lecture Teaching Approach

The complete subject matter that has to be learned is presented to the students by the instructor. As a result, the pupils are passive listeners who can recollect material when needed but cannot use critical reasoning. The instructor engages in beneficial activities such as idea clarification, questioning, prompting thought and discussion, explaining, and showing. Additionally, the instructor promotes students' active participation in questioning, discussing, and observing. The goal of the conversation is to pinpoint students' areas of weakness so that remedial teaching and feedback can be provided. Additionally, the instructor summarises the lesson both orally and on the whiteboard.

Data Analysis

The mean was employed to analyse all study questions, while Analysis of Covariance (ANCOVA) was utilised to analyse the hypotheses. The significance level of 0.05 was used to evaluate all hypotheses.

The hypotheses were tested using ANCOVA because it partially compensates for extraneous variables that distort the independent-dependent connection. It allows statistical control of variables in this study instead of experimental control and combines regression and analysis of variance statistics. In a quasi-experimental study with non-randomised and non-equivalent groups, ANCOVA statistically removes the proportion of dependent variable variance that existed before the trial. Additionally, ANCOVA reduced analytical error variance.

All assumptions of ANCOVA were met based on the result of Levene's test. The test showed

F(2,162) = 1.475 and a p-value of 0.226. With this, one can conclude that the variances of the groups being compared are likely equal, and the assumption of homogeneity of variance is met. Thus, all assumptions of ANCOVA were met.

Findings

RQ1: Does the DA technique affect Social Studies students' learning outcomes?

Table 1. Average pretest and posttest scores regarding the effect of the DA approach on the learning outcomes of Social Studies students

	Social Studies Learning Outcomes Test (SSLOT)					
		Pretest		Posttest		
Instructional Approach	N	Mean	SD	Mean	SD	Learning outcomes Gain
Devil's Advocate Approach	89	11.69	3.36	16.75	5.01	5.06
Lecture Approach	75	11.13	2.68	12.97	2.67	1.82

Table 1 displays the average scores of Social Studies students taught using the DA teaching approach during pretest and posttest assessments. The data indicate that students taught utilising the DA approach had a pretest average of 11.69, whereas those trained through the lecture teaching approach had a pretest mean of 11.13. At posttest, students taught using the DA approach achieved a mean score of 16.75, whereas those instructed through the lecture teaching approach attained a mean of 12.97. The disparity in the mean indicates an impact on students' learning outcomes when instructed using the DA teaching approach. The study indicated that the DA technique improved students' learning outcomes effectively than the lecture teaching approach, based on the marginal differences observed in their pretest and posttest results.

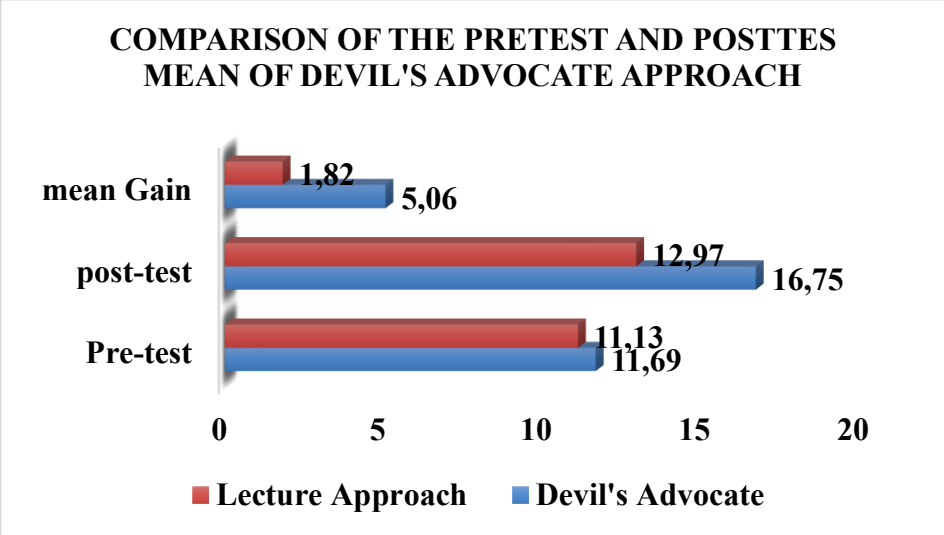

Figure 4: Pretest and posttest average of students utilising the DA Approach

RQ2: Does school location affect Social Studies students' learning outcomes when exposed to the DA teaching approach?

Table 2. Devil's Advocate Approach by School Location

School Location	Social Studies Learning Outcomes Test (SSLOT)					
		Pretest		Posttest		
	N	Mean	SD	Mean	SD	Learning outcomes Gain
Urban	92	10.54	3.53	15.29	3.39	4.75
Rural	72	10.89	3.97	17.48	4.22	6.59

Table 2 presents a comparative analysis of the average learning results for urban and rural Social Studies students taught using the DA teaching approach. The pretest average for urban students was 10.54, whereas the posttest average was 15.29, resulting in a learning outcomes gain of 4.57. In the rural cohort, the pretest average was 10.89, whereas the posttest average was 17.48, resulting in a learning outcomes gain of 6.59. Relative to the posttest and the gains in learning outcomes, it indicates that students in rural school locations exhibited improved learning outcomes compared to their counterparts in urban school locations. Consequently, students in rural schools outperformed their urban counterparts when employing the DA teaching approach as a pedagogical approach.

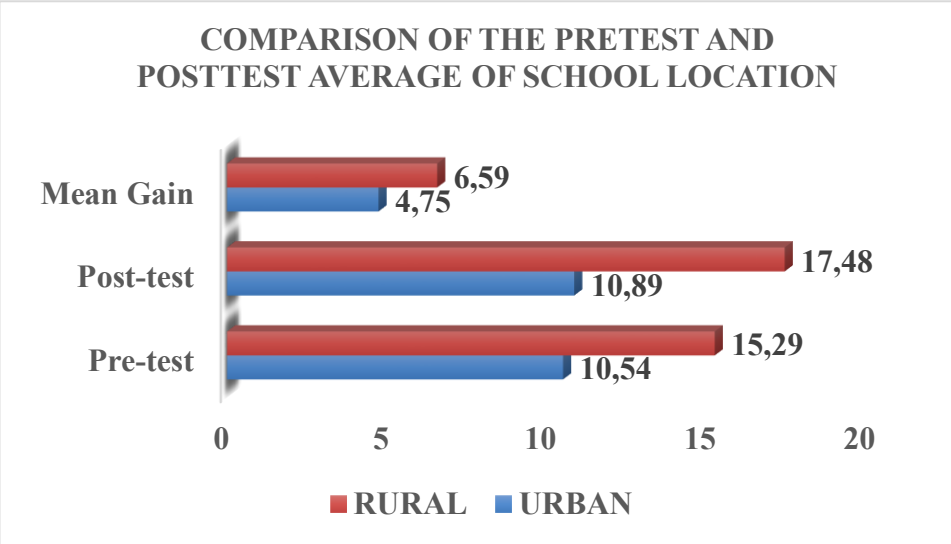

Figure 5: Pretest and posttest average of students categorised by school location.

H01: The DA method has no substantial effect on Social Studies students' learning outcomes.

Table 3. ANCOVA Analysis of the Substantial Effect of Devil's Advocate Approach on Social Studies Students' Learning Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	938.245[a]	2	312.227	31.667	0.00	.185
Intercept	618.514	1	618.514	60.175	0.00	.496
Pretest	251.550	1	251.550	25.574	0.00	.017
Approaches*	554.273	2	286.488	26.455*	0.00	.167
Error	964.705	162	10.233			
Total	27723.010	164				
Corrected Total	1924.071	163				

Table 3 and the graph present the comparative average of posttest scores for Social Studies students in the experimental groups, analysed using ANCOVA. The table indicated that the calculated F value of 31.667 exceeds the necessary F ratio of 3.05 (F0.05 (2, 162) = 3.05). The null hypothesis (Ho2) is hereby rejected. Thus, DA has a substantial effect on Social Studies students' learning outcomes.

Preliminary checks were conducted to ensure that there was no violation of the assumption of normality, homogeneity of variances, homogeneity of covariance, homogeneity of regression slopes, and reliable measurement of covariates. After adjusting for the DA scores, there was a substantial effect on Social Studies students' learning outcomes (F (1,161) = 251.550, p = 0.000, partial eta squared/effect size of 0.167) under the approaches. This suggests that, after controlling for other variables in the model, the independent variable accounts for 16.7% of the variance in the dependent variable. With F(1.162) = 1.475 and p=0.03, Levene's test results suggest that the first assumption, that of homogeneity of variance, is probably satisfied. We can rule out the null hypothesis because the p-value is lower than the normally accepted significance level of 0.05 (0.03).

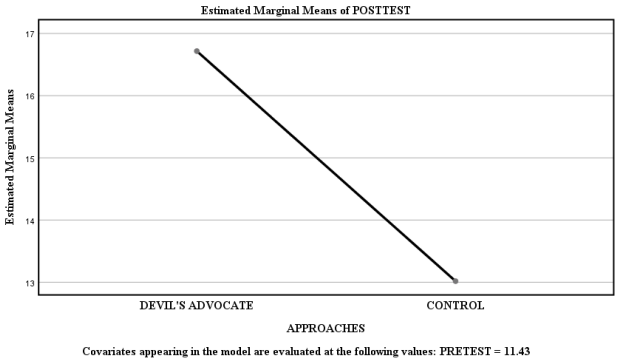

Figure 6: Graphic visualisation of the findings of the effect of the DA approach

H02: School location will not substantially impact Social Studies students' learning outcomes when exposed to the DA approach.

Table 4. Analysis of Covariance for Students' Learning Outcomes by School Location

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	21665.556[a]	2	10882.778	157.388	.000	.072
Intercept	3776.018	1	3776.018	53.847	.000	.946
PRE_TEST	20887.216	1	20887.216	302.886	.000	.090
LOCATION	156.262	1	156.262	2.264	.124	.072
Error	12268.544	162	67.858			
Total	744569.000	164				
Corrected Total	33845.223	163				

Table 4 indicates no substantial effect of location on students' learning outcomes, F(1,156) = 2.264, p = .124. This suggests that rural and urban students taught Social Studies through the DA approach exhibited no substantial differences in their learning outcomes. Consequently, hypothesis two (2), which posits that school location has no considerable effect on students' learning results when taught using the DA approach, was upheld. This implies that school location does not have a substantial effect on Social Studies students' learning outcomes when exposed to the DA approach.

Preliminary checks were conducted to ensure that there was no violation of the assumption of normality, homogeneity of variances, homogeneity of covariance, homogeneity of regression slopes, and reliable measurement of covariates. After adjusting for school location scores, there was no substantial effect on Social Studies students' learning outcomes (F (1,162) = 302.882, p = 0.000, partial eta squared/effect size of .072 under location). This suggests that, after controlling for other variables in the model, the independent variable accounts for 7.2% of the variance in the dependent variable.
The assumption of variance homogeneity is likely met, according to Levene's test result with F(.345) and p-value of .558. The null hypothesis (that the variances are equal) is not rejected because the p-value (.558) is higher than the conventional significance level of 0.05.

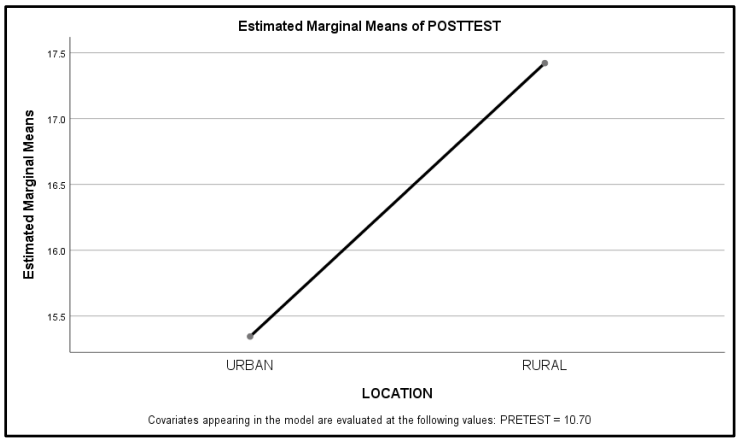

Figure 7: Graphic Visualisation of the Findings of School Location

H03: Teaching approach and school location will not interact to affect Social Studies students' learning outcomes substantially.

Table 5. ANCOVA of Interaction between Instructional Approachesand Location on Students' Learning Outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1116.364[a]	3	372.121	25.900	.000	.327
Intercept	34682.797	1	34682.797	2414.001	.000	.938
APROACHES * LOCATION	4.296	1	4.296	.299	.585	.002
Error	2298.776	160	14.367			
Total	39391.000	164				
Corrected Total	3415.140	163				

Table 5 reveals that the interaction effect between teaching approaches and school location on students' learning outcomes is not significant. The exact probability .299 associated with the interaction effect due to teaching approach and school location is greater/higher than 0.05 and thus not significant. To this effect, failed to reject the null hypothesis and concluded that there was no significant interaction effect between teaching approaches and school location on students' learning outcomes in Social Studies.

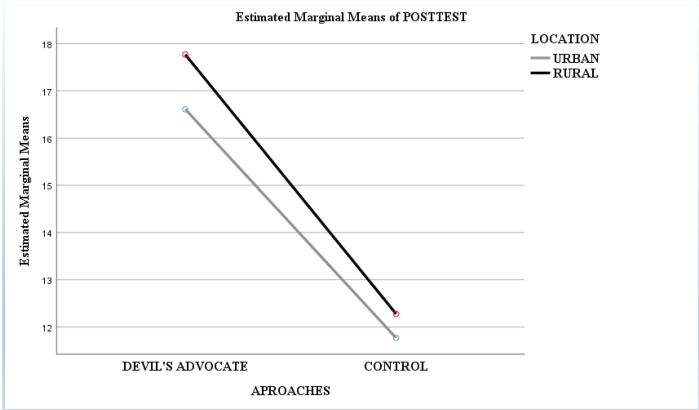

Figure 8: Graph showing the interaction effect of instructional approaches and school location on Social Studies students' learning outcomes.

Results, Discussion, and Recommendations

The result of hypothesis one shows a substantial effect of the DA approach on Social Studies students' learning outcomes. This result is not far-fetched because the DA approach plays a role in group dynamics such as group trust, cohesion, and accuracy.

This finding may be attributed to the fact that the DA teaching approach encourages active participation and cooperation among learners, in contrast to the lecture method, which relies on passive listening. DA promotes students' participation in classroom activities, which aids their comprehension of the topics taught. This result is consistent with Afri et al. (2021), Akhmad et al. (2021), Kassem (2021), Aulia and Apoko (2022), Odesa and Ogheneakoke (2023), Al-Badani, andAlmuslimi (2023), Ghafar (2024), who in their studies demonstrated that the DA approach enhanced students' learning outcomes. Thus, the DA approach enhanced the learning outcomes of students more effectively than those instructed using the

lecture approach. This finding also aligns with the studies by Zare and Othman (2013), Kasi (2018), Darma (2018), Cunico et al. (2023), Ghafar (2024), and Baziganya et al. (2024), which found a significant effect of the DA approach on students' learning outcomes. In other words, support the utilisation of the devil's advocate approach to boost students' learning outcomes. The approach enhanced students' learning outcomes with the DA approach in comparison to their counterparts instructed with the lecture approach. This could be because the DA helped the students to comprehend the content of the subject matter thoroughly. DA strategy forces students to broaden their analysis, viewpoint, and comprehension of a subject. The outcome of the result may also be because it allows students to build upon and integrate others' ideas more easily, bringing about a higher flow of communication, inference, and improved learning outcomes.

However, the result contradicts the study of Graham and Hebert (2016), Mahlangu (2017), Baziganya et al. (2024), and Vincent Ugah Uguma et al. (2025), who found that DA was not effective in improving students' learning outcomes.They reported a missed result regarding the use of the DA teaching approach on students' learning outcomes.

The result of hypothesis two indicates no substantial effect of school location on Social Studies students' learning outcomes exposed to the DA approach.It shows no substantial effect of school location on rural and urban students' learning outcomes in Social Studies, as instructed using the DA approach/method. The result indicates that the effectiveness of DA on students' learning outcomes was not sensitive to school location. This can be attributed to the quality of the instructional approach on the learners' level of knowledge acquisition. This finding aligns with the findings of Agbaje and Omotade (2014), Ntibi and Edoho (2017), Essien (2017), Adebayo et al. (2018), and Abamba (2021), which indicate that school location has no substantial effect on students' learning outcomes. This can be because rural school students, with the introduction of mobile phones and the internet, have the opportunity to access the internet and social network sites like their urban counterparts. İn other words, the result could be due to factors such as the quality of education, teacher-student interactions, curriculum relevance, internet access, computer facilities, mass media exposure, and well-equipped libraries that enriched the academic experiences of rural students. Cultural factors, including attitudes toward technology, community support for education, and the value placed on learning outcomes, may have contributed to the result. Moreover, students are accountable for their learning outcomes' success by demonstrating competence, making valuable choices, and taking actions that lead towards their educational goals. This implies that whether the students are in urban or rural schools, the effect of the DA instructional method is more critical in terms of their learning outcomes. It may also be because both urban and rural students share a common perception of what success is all about. In other words, the rural students did not feel inferior to their urban counterparts and thus they were able to compete favourably with them. Therefore, it implies that both have a level playing ground, hence, no school location effect occurred in their learning outcomes. Thecontradictory findings regarding school location could not be divorced from variation in supervisory techniques of school leaders and the motivation of teachers.

Evidence from hypothesis three shows no significant interaction effect of teaching approach and school location. This finding concurs with Abamba (2021), who reported no statistically significant interaction effect of teaching approach and school location on students' learning outcomes. The result of this study implies that the effectiveness of DA in enhancing students' learning outcomes is not dependent on school location. DA is as effective in both rural and urban school locations. This indicates that the relative effect of the DA teaching

approach is consistent across the two levels of school location, suggesting that both rural and urban students significantly benefited from the teaching approach.

There is a higher chance of selection bias because the participants are not chosen at random. In other words, the groups being compared might have important differences that could have changed the result even before the intervention. This makes it difficult to determine whether the observed changes are due to the surgery or the existing differences. If groups are not assigned at random, it can lead to selection bias, where they are different in essential ways from the start. This makes it difficult to distinguish the intervention's effect from other factors that may influence the results. This makes it less likely that a result is caused by something else, and it may also make it harder to use the results in other situations or with other people.

Conclusively, the study established an empirical basis for exploring the effect of the DA approach on Social Studies students' learning outcomes. The study has established that the DA approach enhanced students' learning outcomes in Social Studies.The study also confirms that school location had no substantial effect on the learning outcomes of Social Studies students tutored with the DA approach. It established that the DA approach enhanced urban and rural students' learning outcomes in Social Studies.

Given the study findings and conclusion, the following suggestions were developed:

- Social Studies teachers should adopt the DA approach to teaching Social Studies to foster dramatic, interactive learning and improved learning outcomes.
- Teachers of social studies should receive training from the government on how to use cutting-edge teaching approaches, such as this approach, in classroom settings.
- A teacher training framework must prioritise practical implementation, continuous professional growth, and a student-centred approach. It must also cater to the distinct requirements of educators within their local environment.
- Training must extend beyond theoretical knowledge, offering instructors the opportunity to use new skills and tactics in authentic classroom environments. It should not be a singular event but rather a continuous process that helps educators throughout their careers.
- Regardless of the school's location, the government should ensure the availability of enriched learning environments that foster not only academic skills but also social, creative, and emotional growth, thereby supporting the successful implementation of innovative teaching strategies, such as the DA approach.
- Digital tools or materials such as collaborative online platforms, interactive simulations, and AI-powered assistants should be utilised to support the DA approach.
- The study did not examine how other factors, such as teacher experience, motivation, interest, and the competitiveness of the arguments/debates, might have influenced the results. More research could be done on this topic.

Limitations of the Study

This study has certain shortcomings or limitations. First, in conducting the study, the students' regular Social Studies teachers were used. The personalities of these teachers, their experience, attitude, and gender were not considered, and these factors could have influenced the study's results. It must be appreciated that this study was conducted with a limited sample of 164 students from four (4) schools only. These may not allow for broader generalization of the findings of this study.The treatment period, though lasting six weeks, was essentially restricted to the teaching period as spelled out in the school schedule and timetable. This was

to ensure that the study did not disrupt the regular course of the school. The content matter taught was also limited to what is stipulated in the syllabus, to ensure that nothing disrupted the smooth running of the cooperating schools. It is believed that the application of more units of instruction might make for a better generalization of the results of this study.

Declarations

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Funding: *No funding received for the study.*
Ethics Statements: *This study is an original work, and proper citations have been made in the text and references. Ethical principles were adhered to during the data collection process.*
Conflict of Interest: *There is no conflict of interest among the authors.*
Informed Consent: *As study data were collected from students, informed consent was obtained from the schools and the State Ministry of Education.*
Data availability: *The study data are kept confidential by the authors/researchers. Contact with the researchers is required for access.*

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