EFFECT OF 5ES INSTRUCTIONAL STRATEGY ON PUPILS' ACADEMIC ACHIEVEMENT IN NATIONAL VALUES EDUCATION IN ILORIN, NIGERIA

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Abstract
There seems to be a rigorous effort to restructuring and finding more effective and appropriate instructional strategies that promote pupils' active engagement in the teaching and learning of national values education (NVE) in an attempt to develop an individual's well-balanced personality. This study explored the effect of the 5Es instructional strategy on pupils' academic achievement in national values education in Ilorin, Nigeria. This study adopted a 4x5x2 pretest, posttest, and non-equivalent groups. The population consisted of all pupils in 212 middle-basic schools in Ilorin, while the target population was basic five pupils. Purposive sampling technique was used to select 113 pupils in four intact classes from four basic schools. The treatment groups were exposed to treatment packages on three topics across the three components of NVE. The two groups were subjected to pretest and posttest using the validated Pupils' Achievement Test in NVE at 0.78 coefficient value. Data were analyzed using descriptive statistics of frequency counts and percentages, inferential statistics of independent t-tests, and analysis of covariance (ANCOVA) at 0.05 significance level. Findings revealed that there was a significant difference in the middle-basic pupils' academic achievement when taught National Values Education using 5Es and those taught using the conventional method. Study concluded that 5Es instructional strategy significantly improved basic school pupils' achievement in NVE. It was therefore, recommended, among others, that teachers should take advantage of the 5Es instructional strategy in teaching the pupils NVE and other related subjects to develop a well-balanced personality.
Keywords: *Instructional strategy, middle-basic pupils, academic achievement, National Values Education*

Introduction

National Values Education (NVE), encompassing three components – social studies, civic education, and security education – is a critical component of the educational system in Nigerian basic schools. It plays a vital role in shaping the moral, ethical, and cultural values of young learners, thereby helping them become responsible and well-rounded citizens. Over the years, there has been growing concern about the effectiveness of national values education in Nigerian basic schools in imparting the desired values and morals to pupils. There have been challenges such as declining moral standards, social vices, and a lack of awareness and appreciation for Nigerian cultural values among young citizens (Yusuf et al 2018).

Despite the relative importance of national values education and its fundamental roles for individuals in societies, the quality of learning experiences, which in certain cases depend on teachers' effectiveness of instructional strategies to promote active engagement of pupils in and out of the classroom, has remained unfavorable (Yusuf et al, 2018; Ikwumelu & Oyibe, 2011). At all levels of schooling, national values education (NVE) teachers can contribute to pupils' academic and social development in a unique way that can bring an improved academic achievement of learners. Every person, stakeholder, national values education educator, and government has always shown concern about this since it undoubtedly jeopardizes the cornerstone of Nigeria's values and vision as a country.

Concerned stakeholders' interest in education has been piqued by the academic achievement in NVE. It has significant impacts on both the future of a country overall and the future of learners in particular (Sarif & Van

Dana, 2023). It is also often believed to be essential in influencing pupils' career-seeking actions. According to Noronha et al. (2018), pupils' academic achievement positively affects their self-efficacy beliefs, self-esteem, motivation, engagement, academic career, and moral well-being. Several studies have been conducted to identify the causes of the poor achievement of pupils in NVE and to propose solutions. Okafor (2017) proposed an interactive mode of teaching as a solution to improve pupils' achievement, as they would be actively engaged in the learning process. Looking at the crucial roles of NVE, unquestionably, the success of the objectives of value education in Nigeria's basic schools depends solidly on the use of effective and appropriate instructional strategies (Yayi & Abilagbo, 2020). However, it has been noted that teacher-centered strategies have always been used as instructional strategies by teachers in Nigerian basic schools (Yusuf et al, 2018).

Previous studies such as Muhammed (2016); Nevin (2017); Yusuf et al., (2018); and Udeme (2022) have found that traditional teacher-centered instructional strategies have repeatedly been shown to be inappropriate to learner-centered strategies like the 5Es. The learner-centered instructional strategies support mastery learning and guarantee long-term retention or thorough comprehension of the course material. However, it is asserted that active learning, student engagement, participatory class, and other student-centered activities are relevant learner-centered instructional strategies for an effective teaching and learning process. A lesson that is learner-centered motivates pupils to do the challenging work with explicit skill instruction and a learning process. It engages pupils in critical thinking, problem solving, argument analysis, evidence evaluation, and hypothesis generation. Weimer (2012) asserted that learner-centered instructional strategies, including the 5Es instructional strategy, motivate learners by giving them meaningful control over learning processes, promoting collaboration, and encouraging reflection on what and how pupils are to learn. The strategy tries to help pupils formulate questions of their own and discuss, explain, debate, or brainstorm during the process of learning and teaching in the class.

The strategies aimed at encouraging learning by doing through guided discovery between pupils and the teacher in the classroom setting serve to enhance effective decision-making while analyzing social issues, so research has supported the use of learner-centered instructional strategies in carrying out values education classroom interaction (Yusuf et al., 2018). Many researchers in different studies (Gambari, 2010; Stephen & Joshua, 2017; Nevin, 2017; Yusuf et al., 2018; Suzianah, 2021; and Udeme et al., 2022) have recommended the use of the 5Es teaching strategy that supports pupils' active participation and full engagement in the teaching and learning process.

The 5Es strategy is a learning strategy that promotes meaningful learning by creating a connection between new and prior learning and allowing for active application of learned material (Bıyıklı, 2013). It is a model that has applications at different teaching levels and in different subjects. It enables students to be active and create their own concepts at every stage (Martin, 2006). The 5Es strategy of classroom instruction, which was incorporated into the Biological Science Curriculum Study (BSCS), encompasses five phases: engage, explore, explain, elaborate, and evaluate, is considered one of the best approaches recommended for teaching within a constructivist learning approach (Bybee, 2015). The 5Es instructional strategy to Yadigaroglu and Demircioglu (2012), evolves from the constructivist approach, which allows students to actively participate in the learning process as it encourages learners to explore, experience, and discover various subjects, and as a result, it can be considered an effective method for teaching. The five phases of the 5Es learning model include Engage, Explore, Explain, Elaborate, and Evaluate.

In the first phase of the learning strategy, the teacher attempts to grasp the pupils' past knowledge and spot any knowledge gaps. In order for pupils to be prepared to study, it is also crucial to cultivate their enthusiasm for the next concepts (Elissar, 2022). At this stage, the teacher tries to capture the pupil's attention and interest (Yusuf, 2018). The second phase, explore - provides pupils with a common base of hands-on activities. These activities will help pupils use prior knowledge to inquire, generate new ideas, and conduct a preliminary investigation (Bybee 2015). According to Yusuf, et al, (2018), the teacher's role during the exploration phase is to introduce the activity, provide appropriate context, provide appropriate materials, and address misunderstandings. Pupils explain their understanding of concepts, and the teacher corrects their misconceptions (Bybee 2014). This phase, according to Yusuf et al. (2018), allows active participation in the learning process by both the teacher and pupils. For the most effective learning to take place, teaching should be organized in increasing order of difficulty (Jobrack, 2010).

The elaboration phase of the 5Es strategy focuses on giving pupils space to apply what they've learned. This helps them develop a deeper understanding. Pupils are encouraged to apply their new understanding of concepts, while reinforcing new skills (Duran & Duran, 2004). The 5Es strategy allows for both formal and informal assessment (Elissar, 2022). During this phase according to him, teachers can observe their learners and see whether they have a complete grasp of the core concepts. During the evaluation, Yusuf, et al. (2018) opined that teachers provide opportunities for pupils to demonstrate their knowledge or mastery of the concepts and skills that have been explored.

The 5Es strategy has been found to boost learners' academic achievement in several studies that have looked at the relationship between the strategy and achievement (Kozcu & Güven, 2019; Saraç, 2017; Yaman & Karaşah, 2018). However, numerous studies that have been conducted on the effect of the 5Es instructional strategy such as Eric et al., 2021; İkramettin, 2017; Nevin, 2017; Muhammed, 2016; Chinyere, 2019; Ferdi & Melih, 2022; 2022 and Yusuf et al., 2018 but none of these studies was carried out to examine the effect of 5Es on the academic achievement of middle basic pupils in National Values Education in Ilorin, Kwara State.

Stakeholders and other scholars in the field of education have recently expressed particular worry over pupils' academic achievement in national values education (Yusuf, 2018). This has been the case because changing both the learner's and the learned's behaviours in desired ways is one of the main educational goals. Education also attempts to develop an individual's well-balanced personality in accordance with society's norms. The way a child is raised has an adverse impact not only to oneself or the child's family but also to the whole society (Enyinna & Jessica, 2021). Nigeria is a well-known, diversified country with vibrant ethnicities and cultures. Values education is now required in the core curriculum of elementary schools in order to promote unity in diversity.

It is clear that several factors, including environmental ones, influence pupils' achievement in national values education. These elements have made a significant contribution to the pupils' learning outcomes in the subject matter, both within and outside of the classroom. Mukama (2010) found that each pupil has unique potential and limitations, and the degree to which those potentialities are fulfilled greatly depends on the richness of the child's environment and his early interactions with his peers.

It is important to note that there has been debate concerning the determinants of pupils' academic achievement among numerous psychologists and educators over the years. Others place more emphasis on school environmental factors like class discipline, pupil-pupil relationships, teacher-pupil relationships, and the accessibility of instructional materials in Nigerian primary schools, while others place more emphasis on the teaching strategies of the teachers. Teachers must take into consideration teaching strategies that encourage pupils to actively participate in classroom activities and enhance their academic achievement in all subjects particularly, national values education. The national values education curriculum's application for improving pupils' academic achievement, to a large extend, depends on the teacher.

In this study, parental educational level is considered a moderating variable. Parents' educational background have been identified as potential predictor of their children's academic achievement (Enyinna et al., 2021). It is claimed that is the parents of the pupils who have the highest level of education. Researchers have predicted that the most significant factor in predicting a pupil's academic achievement is the educational degree of the parent. For instance, highly educated parents adhere to contemporary and adoptive academic environments for their children at home, whereas parents with no or limited education tend to treat their children with greater tenderness but unstable academic environments at home and high expectations. The educational level of the parent is one element of a larger group of psychological and social factors that influence learning outcomes favorably for pupils (Enyinma et al., 2021). A range of parental behaviours are indirectly related to children's academic achievement because parents' knowledge, attitudes, values, and aspirations surrounding their children's learning are influenced by their educational level. Consequently, the goal of this study is to include parents' educational level as a moderator variable to mitigate any unintended effect that it might have on the academic achievement of middle-basic pupils in national values education.

Gender, as another moderating variable of interest to the researcher, refers to the male sex or the female sex,

especially when considered with reference to social and cultural differences rather than biological ones, or one of the range of other identities that do not correspond to established ideas of male and female. Teachers sometimes adopt stereotypical practices or routines that separate boys and girls unconsciously (Udeme et al., 2022). Gender differences even exist in academic environments at the level of cognitive functioning (Ghazvini & Khajehpour, 2011). They further argued that girls are more capable of adapting to different learning environments. In the meantime, there are no inherent biological or psychological reasons why girls shouldn't perform as well as boys if they are given the proper teaching strategy, conducive environment, and incentive (Anaduaka et al., 2013).

Addressing concerns, fundamental to the formation of young Nigerian citizens, national values education was incorporated into the Nigerian school curriculum, specifically for pupils at the basic level. The primary goals of teaching this subject are to help pupils develop a meaningful commitment to norms and values, raise the moral bar for young people in society. It has been reported by Transparency International (2017) that, in spite of the important functions NVE is meant to play in every Nigerian child from an early age, Nigeria is still one of the most corrupt countries globally. In addition to the corruption issue, Nigeria is plagued by a number of social vices, including armed robbery, kidnapping, a lack of integrity, cheating during examinations, election meddling, a lack of civic competency, and many more. These social ills might be a result of the declining quality of the nation's education, which is, among other factors, relatively caused by teachers' use of ineffective and inappropriate teaching strategies.

Several studies have been conducted on the 5Es instructional strategy by different researchers in different locations. For instance, Faith and Agbarakwe (2022) studied science teachers' awareness of the 5Es and students' learning styles in secondary schools in Rivers State; Suzianah et al. (2021) investigated the effect of the 5Es on students' academic achievement in mathematics in Turkey; Okafor (2017) examined the effect of the 5Es on senior secondary school students' achievement and retention in Geometry, Anambra; Yusuf et al. (2018) assessed the effect of the 5Es literacy scores of senior secondary school students in civic education in Ilorin; and Ibrahim (2015) studied the impact of the 5Es on pre-NCE students' attitude, retention, and performance in biology, north-west zone of Nigeria. Thus, this study set out to establish the effect of the 5Es instructional strategy on the academic achievement of middle-basic pupils in national values education in Ilorin, Nigeria.

Purpose of the Study
The main purpose of this study was to investigate the effect of 5Es instructional strategy on the academic achievement of middle-basic pupils in national values education. Specifically, the study intended to examine:
1.   the significant difference in the pupils' academic achievement when taught national values education using the 5Es and those taught with conventional methods;
2.   the significant difference in the academic achievement of pupils when taught national values education using the 5Es based on parental educational level;
3.   whether there would be a significant difference in the achievement of male and female pupils when taught national values education using the 5Es; and
4.   the interaction effect of parents' educational level and gender on pupils' academic achievement in national values education using the 5Es instructional strategy.

Research Hypotheses
The following null hypotheses are postulated in this study to guide the researcher:
H_{O1}: There is no significant difference in the middle basic pupils' academic achievement when taught national values education using the 5Es and those taught with conventional method;
H_{O2}: There is no significant difference in the academic achievement of middle basic pupils when taught national values education using the 5Es based on parental educational level;
H_{O3}: There is no significant difference in the achievement of male and female middle basic pupils when taught national values education using the 5Es instructional strategy; and
H_{O4}: There is no significant interaction effect of parental educational level and gender on pupils' achievement in national values education using the 5Es instructional strategy.

Methodology
This study adopted a pre-test, post-test, non-equivalent, quasi-experimental research design. The adoption of a $4 \times 5 \times 2$ factorial design was also considered. The population of this study comprised all pupils in the middle-basic classes, and only Primary Five pupils of two hundred and twelve (212) basic schools in Ilorin, Kwara State, was the target population. Purposive sampling technique was used to select 113 pupils in four intact classes from four basic schools. The treatment groups were exposed to treatment packages on three topics across the three components of NVE. The two groups were subjected to pretest and posttest using the validated Pupils' Achievement Test in NVE (PAT-NVE) at 0.78 coefficient index through the Pearson Product Moment Coefficient (PPMC). Data were analyzed using descriptive statistics of frequency counts and percentages, inferential statistics of independent t-tests, and analysis of covariance (ANCOVA) at 0.05 significance level.

Results
The results of the study were presented in line with the formulated hypotheses.
Research Hypothesis One: There is no significant difference in the middle basic pupils' academic achievement when taught NVE using 5Es and those taught using the conventional methods.
Table 4
T-test Analysis of Middle Basic Pupils taught with 5Es instructional strategy and Conventional Method and their Academic Achievement in NVE

Group	N	Mean	SD	*Df*	*t*	Sig. (2tailed)	Remarks
5Es instructional strategy	53	72.08	5.29				
				111	13.70	0.00	Significant
Conventional method	60	51.53	9.71				

p < 0.05

Table 4 shows a t-test analysis conducted to test for the middle basic pupils' academic achievement when taught with the 5Es and conventional method in NVE. The analysis conducted reveals that there was a statistically significant difference between pupils taught with the 5Es instructional strategy *(M=72.08, SD=5.29)* and pupils taught with the conventional method *(M=51.53, SD=9.71)* at *df* = 111, *t-value* = 13.70 and *p*< .05 alpha level $(t_{(111)} = 13.70, p<0.05)$. Therefore, this finding indicated that middle-basic pupils taught NVE using the 5Es instructional strategy had a higher academic achievement than those taught using the conventional method. As a result, the null hypothesis is therefore rejected.

Research Hypothesis Two: There is no significant difference in the academic achievement of middle basic pupils when taught NVE using 5Es based on parental educational level.

Table 5
Summary of Analysis of Covariance (ANCOVA) showing the Difference in Academic Achievement of Middle Basic Pupils when taught NVE using 5Es based on Parental Educational Level

Source	Type III Sum of Squares	*df*	Mean Square	*f*	Sig.	Remarks
Corrected Model	2151.981[a]	5	430.396	2.749	.022	
Intercept	9229.980	1	9229.980	58.962	.000	
Pretest	1333.596	1	1333.596	8.519	.004	
Parental Educational Level	1338.164	4	334.541	2.137	.081	Not significant
Error	16749.824	107	156.540			
Total	441696.000	113				
Corrected Total	18901.805	112				

R Squared = .114 (Adjusted R Squared = .072).

Table 5 presents an analysis of Covariance (ANCOVA) showing the difference in the academic achievement of middle-basic pupils when taught NVE using 5Es based on parental educational level. The analysis revealed that middle-basic pupils' academic achievement in NVE was not significantly affected by the pupils' parents' educational level (F = 2.137; p > 0.05; df = 4). The F-value of 2.137 is insignificant at the 0.05 alpha level, and as the significant value (.081) is greater than 0.05. Therefore, the null hypothesis is retained based on the result.

Research Hypothesis Three: There is no significant difference in the academic achievement of male and female middle basic pupils when taught NVE using 5Es instructional strategy.

Table 6
t-test Analysis of Male and Female Middle Basic Pupils taught with 5Es instructional strategy and their Academic Achievement in National Values Education

Gender	N	Mean	SD	*df*	*t*	Sig. (2tailed)	Remarks
Male	20	69.40	4.55				
				51	-3.09	0.003	Significant
Female	33	73.70	5.10				

p < 0.05

Table 6 shows a t-test analysis conducted to test for the male and female middle basic pupils' academic achievement when taught with 5Es in NVE. The analysis conducted reveals that there was a statistically significant difference between middle male basic pupils *(M=69.40, SD=4.55)* and middle basic female pupils *(M=73.70, SD=5.10)* when taught with 5Es instructional strategy at *df* = 51, *t-value* = -3.09 and *p*< .05 ($t_{(51)}$ = -3.09, *p*<0.05) alpha level. Therefore, the null hypothesis is hereby rejected. This implies that gender influenced the academic achievement of middle-basic pupils when taught using the 5Es instructional strategy in favour of females.

Research Hypothesis Four: There is no significant interaction effect of parental educational level and gender on the academic achievement of middle basic pupils in NVE using 5Es instructional strategy.

Table 7
Summary of Analysis of Covariance (ANCOVA) showing the Interaction Effect of Parental Educational Level and Gender on the Academic Achievement of Middle Basic Pupils in NVE using 5Es Instructional Strategy

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.	Remarks
Corrected Model	3371.204[a]	10	337.120	2.214	.023	
Intercept	8405.823	1	8405.823	55.207	.000	
Pretest	1423.304	1	1423.304	9.348	.003	
Gender	1485.433	4	371.358	2.439	.052	
Score Levels	49.825	1	49.825	.327	.569	
Parental Educational level * Pupils' gender	1165.935	4	291.484	1.914	.114	Not significant
Error	15530.601	102	152.261			
Total	441696.000	113				
Corrected Total	18901.805	112				

R Squared = .178 (Adjusted R Squared = .098)

The Table 7 presents an analysis of Covariance (ANCOVA) showing the interaction effect of parental educational level and gender on pupils' achievement in NVE using the 5Es. The analysis conducted revealed that middle-basic pupils' academic achievement in NVE was not significantly affected by the pupils' parental educational level and pupils' gender (F = 1.914; p > 0.05; df = 4). The F-value of 1.914 is not significant at the 0.05 alpha level, and the significant value (.114) is greater than 0.05. Therefore, the null hypothesis is retained. This implies that parental educational level and pupils' gender (moderating variables) did not affect the 5Es instructional strategy (the treatment). As a result, the adoption of 5Es instructional strategy as a major treatment had a considerable effect on Pupils' academic achievement in national values education.

Discussion

The findings from this study revealed that a significant difference existed between the academic achievement of pupils taught using the 5Es instructional strategy and those taught using the conventional method, in favour of the pupils that were taught using the 5Es instructional strategy (experimental group). Thus, the pupils taught using the 5Es (experimental group) fared better than the pupils taught using conventional methods (control group), as revealed by the findings of this study. This difference could be attributed to some of the attributes of the 5Es, the futures, such as engage, explore, explain, elaborate, and evaluate, which might have gotten the experimental group more involved and participated in learning, allowing them to achieve better without distress. This finding is consistent with that of Yusuf et al. (2018), and Ibrahim (2015) who all found that the overall academic achievement of the pupils (experimental group) taught using the 5E instructional strategy was significantly enhanced when compared to the pupils taught with conventional methods (control group).

In this study, it was found that no significant difference existed between the achievements of pupils in the experimental group based on parental educational level. This indicates that the 5Es instructional strategy had an equal impact on pupils' achievement in NVE, irrespective of their parents' educational level. This could be attributed to the fact that all middle school pupils in the group had equal access to the 5Es, and the content of the instructional strategy does not differentiate among levels of pupils' parental education. This, however, is contrary to the findings of Enyinna and Jessica (2021) and Muhammad (2020) who both revealed that parents' educational level has an effect on their children's academic performance.

Findings of this study has also shown that there was a significant difference between the achievement of male and female middle school pupils taught NVE using the 5Es in favor of female pupils. This might be traced to the fact that both males and females had no equal tendencies toward assimilation when taught NVE using the 5Es instructional strategy, or probably that the 5Es contents, statements, activities, and questions are gender biased. This, conversely, is in opposition to the finding of Peter (2014) and Ibrahim (2015) who both argued that gender had no significant effect on pupils' academic achievement. However, the finding is in line with the finding of Obiageli et al. (2020) and Charles et al. (2022) who posited that students' gender had an effect on secondary school students' academic achievement.

Also, findings have been revealed in this study that there was no significant interaction effect of the 5Es, parental educational levels, and pupils' gender on pupils' academic achievement when taught NVE. This depicts that the treatment was unaffected by the interaction between the pupils' parental educational levels and pupils' gender, making it easier to conclude that the experimental group's higher achievement in NVE was a result of the use of the 5Es instructional strategy regardless of the two moderating variables (pupils' parents' educational levels and pupils' gender). This finding is supported by Okafor (2017) and conversely inconsistent with the finding of Peter (2014), who found a significant interaction effect of treatment and gender on pupils' academic achievement in social studies.

Conclusion

Consequent to the findings from this study, it can be concluded that the 5Es instructional strategy had more effect on middle basic pupils' academic achievement in national value education than the conventional method irrespective of parents' educational levels and the gender of the pupils.

Recommendations

1.   Teachers should to take advantage of the 5Es strategy in teaching NVE and other related subjects.
2.   Teachers should upgrade their knowledge and skills to the use of the 5Es and other effective and appropriate instructional strategies.
3.   Curriculum planners in Nigeria should incorporate instructional methods such as the 5Es into the basic school curriculum regardless of gender and parental educational levels of the pupils.
4.   Seminars and workshops should be organized for serving teachers to keep them abreast of the 5Es instructional strategy.

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