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Impact Of Insurgency On Senior Secondary School Students' Attitude And Achievement In Mathematics In Adamawa State, North East, Nigeria

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ABSTRACT
The study designed to investigate the impact of Boko Haram insurgency on senior secondary school students' attitude and achievement in Mathematics in Adamawa state, North East, Nigeria. Six specific objectives were formulated to guide the study. The study employed a descriptive survey research design. The instrument used for data collection was structured questionnaire designed inconsonance with the review of available literature on the study under investigation. The data collected from the questionnaire items were analyzed using mean and standard deviation to ascertain the result. The results were presented in order in which the research questions were raised. Based on the research questions, the finding of the study revealed that Boko Haram insurgency had negative impact on male and female students' attitude to learning mathematics. Based on gender, Boko Haram insurgency had more negative impact on female students than their male counterpart. The insurgency had more negative impact on urban area students than their rural counterpart. Students' attitude to learning mathematics was negatively impacted by the insurgency. The students' attitude to learning mathematics based on gender, the Boko Haram insurgency had more negative impact on female students than their male counterpart. Further, students' attitude to learning mathematics based on school location indicated that the Boko Haram insurgency had negative impact on rural area students than their urban area counterpart. In terms of students' achievement in mathematics, the findings of the study revealed that female students were better than their male counterpart in mathematics based on gender. The findings of the study further revealed in relation to the students' achievement in mathematics based on school location showed that the rural students were better than the urban area students.
Keywords: Boko Haram insurgency, mathematics, students' achievement

INTRODUCTION

Education is the bedrock of national and human development. It is a weapon for acquiring skills, relevant knowledge, habits, and inculcating values for surviving in the changing world. The world today, leans heavily on science and technology, demands more of Mathematical knowledge. The future generation is required to be well educated in the field of science and technology, as such some degree of Mathematical literacy is necessary.

Education provides individuals with the knowledge and skills necessary to advance themselves and their nation socially, economically and politically. No nation can acquire development unless it promotes education among its people. Education also plays an important role in social reformation process and

eradicating anti-social elements. In the present age of science and information technology, education will develop people technically through exposure to science and technological education.

A person who shows a certain attitude towards something is reacting to his conception of that thing rather than to its actual state. Attitude is formed by people as a result of some kinds of learning experience. The need for students to develop positive attitude towards Mathematics are associated with higher increased participation in Mathematics courses (Legrand, 2015). Adequate understanding of Mathematics, enhance a positive attitude towards Mathematics which is an important educational outcome in itself - both knowledge and positive attitude necessary for effective learning to occur (Hattie, 2016). Therefore, learning Mathematics does not only involve thinking and reasoning, it is dependent on the attitude of students towards learning and Mathematics. The attitude of students towards Mathematics has been found to affect their achievement in the subject.

Achievement is derived from the acquisition of skills and using these acquired skills to the best of the individual's ability and capabilities to enhance achievement in life (Dahir & Stone, 2014). Bandura (2014) stated that, people's personal expectations for achievement are important in enhancing their desire to succeed. For instance, if one believes that an effort at studying will result in good grade in your examination, you will be inspired to study. These beliefs help to mobilize the individuals' energy in performing a lot better. This is why students, who constantly solve Mathematics problem, with a mind-set to achieve success will excel.

Students' achievement entails that student are required to maintain a satisfactory academic record and meet the obligations of the courses they are enrolled (Ojukwu & Nwanna 2015). Students' performance is the outcome of education, the extent to which a student achieves the educational goals. Put in another way, good student achievement is the personal comportment and commitment of the student to actualize his /her academic purpose which may include concentrating on one's studies, having confidence to success oriented academic activities in school and so in other to maximally actualize his life career or dream (Olofintoye, 2015). Good or bad student achievement can make or mar the goals of a student's life as well as the national goals and development. A good student performance would bring about the motivation and enthusiasm the student needs to attain a high academic standing when compared with his/her mates. It brings about resilience and makes the student success oriented (Morgan, 2014).

Boko Haram Insurgency attack has been identified as one of the factors for senior secondary students' poor achievement in Mathematics as most of the educational structures and other facilities were destroyed. According to Odinkalu (2014), the closing down of schools has far reaching consequences, including ending the education of many students and the opportunity to get to higher education. The constant attacks of schools by the insurgency have left many senior secondary school students and teachers dead. Most school environments in Adamawa State, North-East, are no longer safe for students and teachers because of the constant attack of Boko Haram Insurgency. Killings of students and teachers, destruction of school buildings might have created fears in the heart of few survivors who might desire to attend schools but may be physically, emotionally and psychologically disturbed, this makes the school environment unsafe for learning.

Statement of The Problem

Adamawa State is one of the states in North East Nigeria that activities of "Boko Haram" insurgency are prevalent. Since the inception of "Boko Haram" in 2009, its attacks on people particularly those in the Northern parts of the country have been bizarre, horrendous and steadily progressive in frequencies and intensities.

The insurgents' strategies in attacking locations where human traffics are high such as worship centers, parks or public squares, shopping malls, military installations as well as passenger buses and trains. Several lives of people have been lost to these dissidents aside physical damages that they have caused to physical facilities, commercial as well as agricultural activities.

But particularly more worrisome and of serious concern is their frequent attacks on schools or education centers and installations where school facilities ware targets for destruction and students and sometimes staff ware kidnapped or abduction enmesh and ware used as weapons of war, the basis for negotiation

with government. These series of attacks had led to intermittent closure of schools, willful refusal of students to come to school, and even the willingness of parents to release their children or wards to return to school for fear of attack.

Aside the destructions of lives and properties ware also the psychological pains and emotional trauma that victims of insurgency pass through. These traumatic conditions ware better imagined than experienced. A reflection of this trauma could be seen in student's attitude to learning of Mathematics and their actual achievement in Mathematics. Mathematics is considered as a variable in this study in view of its indispensability to gaining admissions to higher institutions in Nigeria.

Research Questions

The following research questions guided the study:

1. What is the impact of Boko Haram insurgency on senior secondary school students' attitude to learning Mathematics in Adamawa State, Nigeria?
2. What is the impact of Boko Haram insurgency on Senior Secondary school students' attitude to learning Mathematics based on gender in Adamawa State, Nigeria?
3. What is the impact of Boko Haram insurgency on Senior Secondary school students' attitude to learning Mathematics based on school location in Adamawa State, Nigeria?
4. What is the impact of Boko Haram insurgency on Senior Secondary school students' achievement in Mathematics in Adamawa State, Nigeria?
5. What is the impact of Boko Haram insurgency on Senior Secondary school students' achievement in Mathematics based on gender in Adamawa State, Nigeria?
6. What is the impact of Boko Haram insurgency on Senior Secondary school students' achievement in Mathematics based on school location in Adamawa State, Nigeria?

Method Of Data Collection

The instruments used for data the collection was basically the questionnaire designed specifically for the senior secondary two students. The research instruments were in two forms, titled Boko Haram insurgency questionnaire (BHIQ) and Mathematics Students' Attitude questionnaire (MSAQ). The two instruments were developed by the researcher. The two forms of the questionnaire contained the total of 25 items in all for the study. While first and second term mathematics results for senior secondary school students for the 2023/2024 academic session was used to determine the students' achievement in mathematics in Adamawa State, Nigeria.

Population

The population for the study comprised all the Senior Secondary School students in Adamawa State, North East, Nigeria with a total of 4,828 students from 42 senior secondary school for the 2023/2024 academic session The reason for choosing Adamawa State, North East, Nigeria, was because of the frequent Boko Haram Insurgency attacks on secondary schools, which leads to the closure of schools for a period of time

Sample

The sample of 370 Senior Secondary two students were sampled out of the total population of 4,828 senior secondary two students using the Taro Yamane formula for calculating sample from a given population were used for the study. The sample was made up of 180 and 190 male and female student respondents respectively.

Sampling Techniques

The simple random sampling technique of picking without replacement to avoid the duplication of schools were used to draw five senior secondary two schools out of the total number of 42 senior secondary two schools in Adamawa State, North East, Nigeria. However, 74 senior secondary two students were sampled from each of the five senior secondary two schools, which were made up of 36 and38 male and female students from each of the five senior secondary two schools. Further, the study and the sample were limited to senior secondary two students in the public senior secondary schools in Adamawa State, North East, Nigeria.

RESULTS

The results of the analysis from this study were presented as follows. To answer all the research questions, descriptive statistics of mean and standard deviation were used. The results were presented in order in which the research questions raised.

Research Question One: *What is the Impact of Boko Haram Insurgency on senior secondary two students' Attitude to learning mathematics in Adamawa State, North East, Nigeria?*

Table 1: Summary of Result for Mean and Standard Deviation of Attitude to Learning Mathematics

Source		Gender		Location		Cumulative
		Male	Female	Urban	Rural	
Attitude to Maths	X	3.59	3.70	3.55	3.76	3.65
	δ	0.67	0.49	0.70	0.41	0.59
	N	182	188	190	180	370

From table 1, the mean attitude of senior secondary two students to mathematics was 3.65 and standard deviation was 0.59. The mean was higher than the criterion mean of 3.00. Hence, senior secondary two students' attitude to learning mathematics was negatively impacted by Boko haram insurgency in Adamawa State, North East, Nigeria.

Research Question Two: *What is the Impact of Boko Haram Insurgency on senior secondary two students' attitude to Learning Mathematics based on gender in Adamawa State, North East, Nigeria.*

Table 2: Summary of Result for Mean and Standard Deviation of Students' Achievement

Source		Gender		Location		Cumulative
		Male	Female	Urban	Rural	
Achievement AA	$\overline{X}$	49.56	37.45	50.02	36.42	43.41
	δ	9.92	11.42	10.46	10.02	12.29
	N	182	188	190	180	370
Achievement NAA	$\overline{X}$	58.53	52.21	65.37	44.71	55.32
	δ	17.73	20.19	15.09.	17.42	19.25
	N	182	188	190	180	370

AA Mean of affected area NAA Mean of non-affected area

Considering table 1, the mean attitude of male and female senior secondary two students to learning mathematics were 3.59 and 3.70 respectively. While their standard deviation were 0.67 and 0.49 for male and female respectively, revealing that the impact of Boko Haram insurgency was more negatively on female than their male counterpart.

Research Question Three: What is the impact of Boko Haram insurgency on senior secondary two students' attitude to learning mathematics based on school location in Adamawa State, North East, Nigeria?

Table one indicates that the mean attitude of urban and rural area senior secondary two students to learning mathematics were 3.55 and 3.75 respectively in table one. While their standard deviation were 0.70 and 0.41 for urban and rural areas respectively. Therefore, the impact of Boko Haram insurgency was more negative on rural area students than their urban counterpart.

Research Question Four: What is the impact of Boko Haram Insurgency on Senior Secondary two students' achievement in mathematics in Adamawa State, North East. Nigeria?

According to table 2, the mean and standard deviation of achievement in mathematics of senior secondary two students in Boko Haram insurgency affected area was 43.41 and 12.29 respectively. This shows that the mean achievement in mathematics of students in the area not affected by Boko Haram (55.32) was greater than those in Boko Haram insurgency affected area (43.41). The impact was therefore negative.

Research Question Five: What is the Impact of Boko Haram Insurgency on Senior Secondary two students' achievement in mathematics based on gender in Adamawa State, North East, Nigeria?

Still using table 2, the male and female senior secondary two students' mean for Boko Haram insurgency affected area were 49.56 and 37.45 respectively and their standard deviations were 9.92 and 11.42 for

male and female respectively. This indicates that the female were better than the male. Hence the female students' (mean achievement of 37.45 were more affected negatively than the male (mean achievement of 49.56).

Research Question Six: What is the Impact of Boko Haram Insurgency on Senior Secondary two students' achievement in mathematics based on school location in Adamawa State, North East, Nigeria?

Considering table 2, the urban and rural areas senior secondary students' means for school location for Boko Haram insurgency affected area were 50.02 and 36.42 respectively, while their standard deviations were 10.46 and 10.02 for urban and rural areas respectively. The result revealed that the urban area students were better than the rural area students. Therefore, the rural area students (mean achievement of 50.02 were more affected negatively than the urban students' counterpart (mean achievement of 36.42).

DISCUSSION

The findings were obtained from a combination of conclusion derive from the results of the study questions and those obtained from hypotheses raised. The findings were discussed in this section. First, the study found that Boko Haram insurgency decreased school attendance at the study area. Boko Haram insurgency reduced the number of attendance to mathematics lessons at the study area which affects the learning of mathematics negatively. It was gathered that Boko Haram insurgency usually issued warnings of impeding attacks. Wherever these warnings were issued, students would not dare to attend school nor have the opportunity of learning mathematics effectively. This would have far reaching consequences on learning mathematics as a school subject in particular. Educational output (i.e. human capital investments) was influenced by Boko Haram insurgency. It was concluded that the level of investment in human beings required to be achieved by a society, will be difficult with the presence of Boko Haram insurgency. This was because Boko Haram insurgency leads to high level of students' dropout. Improvements in the level for school enrolment, school attendance and school infrastructure were significantly determined by the level of educational input into education by the government. That was the higher the level of school enrolment, school attendance and schools infrastructure, the higher the level of educational out. This implies that educational output increase with the increase in the level of school enrolment, school attendance and schools infrastructure. With the presence of Boko Haram insurgency in a society the level of school enrolment, school attendance and school infrastructure were significantly affected, in which the level of educational output was affected.

Conclusively, Boko Haram insurgency indirectly and significantly affected human investment through school enrolments, school attendance and school infrastructure. This findings aligns with the finding of Patrick and Felix (2023) investigating the effect of Boko Haram insurgency on school attendance in North East Nigeria. Who concluded that schooling activities, ranging from attendance to extracurricular activities were decimated by the activities of the Bok Haram insurgency. The findings of the study therefore agree with Patrick and Felix (2023).

Another significant discovery of the study was that, the Boko Haram insurgency increased mathematics students' failure rates in schools in Adamawa State, North East, Nigeria. It can be noted that it becomes extremely difficult for the students to concentrate on studies in the face of these attack. As earlier noted school and mathematics lesson frequency was reduced, leading to the conclusion of less coaching opportunities in the face of examination. Where coaching opportunities decreased, failure rates were bound to rise. It was discovered that Boko Haram insurgency has led to the developmental challenges through destruction of lives and properties, destruction of schools which have led to the closing down of many schools and businesses, reduction in government revenue, and political instability among others in the North Eastern Nigeria. Mohammed and Ibrahim (2019), while studying the impact of Boko Haram insurgency on students' performance in mathematics in Adamawa State arrived at similar conclusions when they noted that the Boko Haram insurgency increased the rate of examination failure in Adamawa State, North East, Nigerian schools. Another significant finding of study was psychological impact of Boko Haram insurgency on mathematics. Terhemba and Umar (2015) found that when the Boko Haram

insurgency instilled fear in to students, they tend to stay away from schools for safety. In this situation, mathematics periodic activities as well as achievements were reduced to their minimum.

The Consequences of the interplay of Boko Haram insurgency, with school location on one hand and students' gender on the other hand were also investigated. Far reaching consequences of the Boko Haram insurgency on gender and location based on achievements were recorded. Many schools were also closed for significant periods due to insecurity, or because the school had been destroyed or seriously damaged during the attacks. At the peak of the conflict, Boko Haram insurgency also used schools for various military purposes, including holding and executing captives, and as barracks for insurgents. The study, for instance assured a possible difference in attitude to learning mathematics as the result of gender and or school location. Based on these, the study holds the view that gender has no significant consequences in determining the effect of Boko Haram insurgency on mathematics at the study area, especially as it related to students.

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