

IMPACT OF SCIENTIFIC AND MATHEMATICAL KNOWLEDGE AS A TOOL FOR EFFECTIVE SECURITY DELIVERY IN NIGERIA

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Abstract

This study investigated the impact of Scientific skills as a tool for effective security delivery in Nigeria. A total of one hundred and twenty respondents were used for the study comprising of mathematically inclined teachers. Three research questions and hypotheses guided the study. Descriptive statistics of frequency count, mean, standard deviation and chi-square was used to test the research questions at 0.05 level of significance. The cumulative mean of 3.45 as revealed by the result shows that security threats in the society today can be substantially subdued by mathematical knowledge. This indicate that mathematical skills has a significant relationship on the security issues. It was concluded that with the knowledge of mathematics, major security threats in the society can be effectively managed. Hence, it is recommended that government at all levels should place functional mathematics educator at all levels since it is paramount in crime and security problems solutions. Also, mathematics experts should be encouraged for more research on insecurity, the outcomes of which can assist in providing solution to the National security challenges.

Keywords: Mathematics, Security, Science knowledge and Descriptive Statistic

Introduction

Science in general have been described as a precision tool used by all Nations in their search for a clear understanding of the physical world. It has been recognized as the foundation of technological development without which a nation cannot become prosperous and economically independent. The Nigerian government has demonstrated this by adopting education as an instrument par excellence for achieving development. It is well known that the level of social and economic development of any country is ultimately connected with the level of development of that country in science and technology. Since Science is known to be at the foundation of transformation of a Nation, it means that the level of social and economic development is closely connected with the level of development in the scientific field (Kuku, 2012).

It has also been asserted that no society can develop without the effective teaching and learning of scientific subject in schools (Ukeje, 2002). According to Niss ((996), at international level. the fundamental reasons for teaching schools science subjects include: contributing to the technological and socio-economic development of the society; contributing to its political ideological and cultural maintenance and development; and providing individuals with prerequisites which may help them to cope with life in the various spheres of education or occupation, private life, social life, life as a citizen. Science skills are relevant to a wide range of analytical, technological, security, political and economic applications and the solid foundation in Science prepares one for other educational and professional challenges (Ambali. 2014).

To complement the above emphasis, Schatz (2014) further pointed that the United States National Security Agency hires approximately 50 highly qualified mathematicians per year to enhance its operational work. Mathematics as a science subject is therefore seen as the language of science and technology (Ugbebor, 2009). Ibidapo-Obe (2011) also stated that science knowledge is fundamental in addressing the critical issues of economic transformation and globalization. Otunu-Ogbisi and.Ukpebor, (2009), see science as an effective tool for solving crime and security problems. According to Wasagu (2009) science is a field of study that acquaint recipients with certain basic knowledge, skills, competences and values that are essential for successful living within the society. Akpan (2010) opined that science is a transformation field that contributes to quality of life in so many areas. These include health, nutrition, agriculture, transportation, and energy production. He further stressed that science ensures that the air we breathe, and the water we drink are not sustaining vectors of disease and decay. Technologist, engineers, medical doctors and other professionals are critical elements needed in running the affairs of the nation for sustainable development.

Development involves advances economically socially, morally and intellectually. It means improving the total circumstances of man on earth. It includes satisfying his needs and granting him mastery of the environment (Amino. 1986). Sustainable development according to Nabueze and Ozioko. (2015) is that development that leads to fulfillment of societal ideals. It encompasses development in all aspects of the life of citizens including social, economic and political lives. The factors that influence development are human ability to explore, invent and utilize knowledge to solve problems. Man's ability to do this is based on the quantum of skills acquired through the educative process. This is because skills are not necessarily inherent they are acquired disposition that can be taught and learned.

Amino (1986) asserted that the education system of any nation should provide the citizens with sufficient and appropriate keel of knowledge that could be applied to solve personal tot societal problems. It should also enable the citizens to acquire the type or attitude that enables them to interact meaningfully and purposefully with other members of the society for the overall benefit and improvements of the society. In line with this the education system in Nigeria should be aimed at acquisition of appropriate skills and competence as equipment for the individual to live in and contribute to the development of the Nigerian society. That is, the emphasis is on relevance, functionality and the application of knowledge to solve problems. However, Science importance to human existence cannot be overemphasized in view of its application to human everyday life activities (Sunday, Akamu and Fajemidagba, 2014). Science is an essential disciplines that are recognized as a tool for solving everyday problem faced by individuals. Science is an important field as knowledge of it enhances a person's reasoning, problem-solving skills and in general, the ability to think.

Statement of Problem

Ensuring security involves the act of keeping safe. Similarly, safety is the watch word of people that are security conscious. However, scientific skills are evident in each form of security. Similarly, observation in the society today reveals that there is no human development without scientific knowledge either in the area of planning or evolution. Ogunkunle and Adeyemi (2013) further explained that scientific knowledge is simply concerned with the ability to count, identify, reading of figures, making ideas real, reading as well as recording the information numerically applications. Therefore this study basically stressed the impacts of scientific skills as a tool for effective security delivery.

Objectives of the study

The purpose of this study is to investigate the impact of scientific skills as a tool for effective security delivery' in Nigeria. Specifically, the study seeks to investigate the following objectives;

1. To determine if the security threats common in our society today can be substantially subdued?
2. To determine if scientific knowledge have a significant effect on the society?
3. To determine if there is a relationship between scientific knowledge and security issues?

Research Questions

1. Can the security threats in our society today be substantially subdued by scientific knowledge?
2. Do Scientific skills have a significant effect on the society?
3. Is there any relationship between scientific knowledge and security issues?

Research Hypotheses

According to the formulated questions above, the following hypotheses will help to answer such questions.

Ho₁: There is no statistical relationship between security threats and scientific knowledge.

Ho₂: There is no significant relationship between scientific skills and the society.

Ho₂: There is no significant relationship between scientific knowledge and effective security delivery.

The following are the significance of this research study

1. The outcome of this study will educate security detail providers that scientific skills can serve as instrument for effective security delivery.
2. This research would help governmental bodies recognize their areas of strengths and weaknesses in providing better security adjustments.
3. This research will be a contribution to the body of literature in the area of effective security delivery.

Testing Hypotheses

Null Hypothesis 1 (Ho₁): There is no statistical relationship between security threats and scientific knowledge.

To answer this question, the data obtained from the respondents were subjected to chi square statistics and the result is presented in table 1.

Table 1. Chi square analysis on the relationship between security threats and scientific knowledge

Variables	N	Mean	Std.Dev	df	X ² -cal	X ² -crit	Remark
Security threats and mathematical knowledge	120	17.33	1.751	12	36.533	14.070	Significant

Table 1 Shows Chi square analysis of the relationship between security threats and scientific knowledge. The table revealed that at df = 12, X²-cal (36.533) is greater than X²-crit of 14.070. This implies that there is a significant relationship between security threats and scientific knowledge.

Null Hypothesis 2 (H_{02}): There is no significant relationship between scientific skills and the society. To answer this question, the data obtained from the respondents were subjected to chi square statistics and the result is presented in table 2.

Table 2 Chi square analysis on the effect of scientific skills on the society

Variables	N	Mean	Std.Dev	df	X^2 -cal	X^2 -crit	Remark
scientific skills and the society	120	15.83	2.229	12	63.883	18.307	Significant

Table 4.5 shows Chi square analysis on the effect of scientific skills on the society. The table revealed that at $df = 12$, X^2 -cal (63.883) is greater than X^2 -crit of 18.307. This implies that there is a significant relationship between scientific skills and the society.

Null Hypothesis 3 (H_{03}): There is no significant relationship between scientific knowledge and effective security. To answer this question, the data obtained from the respondents were subjected to descriptive statistics and the result is presented in table 3.

Table 3 Chi square analysis on the relationship between scientific knowledge and effective security

Variables	N	Mean	Std.Dev	df	X^2 -cal	X^2 -crit	Remark
Scientific knowledge and effective security	120	15.48	2.146	12	82.600	19.675	Significant

Table 3 shows Chi square analysis on the relationship between scientific skills and effective security delivery. The table revealed that at $df = 12$, X^2 -cal (82.600) is greater than X^2 -crit values of 19.675. This implies that Scientific skills have a significant relationship on the effective security delivery.

Discussion of Results

The present study investigated the impact of scientific knowledge as a tools for effective security delivery in Nigeria. The result showed that through appropriate scientific measures, security threat in our society can be substantially subdued. This phenomenon agreed with Ibadapo-Obe (2011) also stated that mathematics knowledge is fundamental it addressing the critical issues of economic transformation and globalization. Otunu-Ogbis and Ukpebor, (2009), see science as an effective tool for solving crime and security problems. Science importance to human existence cannot be overemphasized in view of its application to human everyday life activities (Sunday, Akamu and Fajemidagbe 2014).

Similarly, the chi-square result agreed with Ambali (2014) who stated that scientific skills have a significant relationship on the security issues. For example, Mathematical skills are relevant to a wide range of analytical, technological scientific, security, political and economic applications. Buttressing this point, Ukeje (2002) stated that it has also been asserted that no society can develop without the effective teaching and learning of science courses in schools.

Recommendations

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

- i. Government at all levels should continue to provide functional scientific education at all levels since it is paramount in crime and security problems solutions.
- ii. Scientific experts should be encouraged by government to conduct security researches, the outcomes of which can assist Nigeria in combating the nation's security challenges.
- iii. Scientific students should be encouraged to develop and generate technological simulations in addressing maritime challenges.
- iv. Scientific education programmers should focus on developing in students' deep and genuine understanding of scientific ideas to aid national transformation.
- v. The learning environment should be made adequate for effective learning to take place. Thus, necessary infrastructure and facilities should be made available.
- vi. A significant number of graduates of applied sciences should be enlisted into the nation's security manpower structure to elicit critical/logical reasoning.

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