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STUDENTS' PERCEPTION OF LEVEL OF DIFFICULTY OF TOPICS IN BASIC SCIENCE CURRICULUM IN JUNIOR SECONDARY SCHOOL CERTIFICATE EXAMINATION IN YENAGOA LOCAL GOVERNMENT AREA OF BAYELSA STATE

Gideon Mudiem Titus
Department of General Studies, Bayelsa State College of Health Technology. Ogbia-Town,
gimotitus@gmail.com, 08036281672

Abstract
The study examined students' perception of the level of difficulty of topics in basic science in junior-secondary-school certificate examinations. The sample was made up of three hundred and seventy-three (373) junior secondary students drawn from sixty-seven (67) secondary schools in Yenagoa Local Government Area of Bayelsa State. The study was guided by two research questions and two hypotheses. The instrument used in the study was the Basic Science Topics Checklist (BSTC), which consisted of twenty-one (21) topics drawn from the junior secondary school curriculum. The instrument was validated by experts, and a coefficient of reliability of 0.76 was established using the Pearson Product Moment Correlation Coefficient. The t-test and mean statistics used in analysing the data revealed that students in public schools perceived the topics as more difficult than those in private schools; also, there was no significant difference between male and female students' perceived level of difficulty in basic science. The paper therefore recommended the use of certified teachers in the teaching of basic science in junior secondary schools, especially in private schools in Bayelsa State. Other recommendations were also made.

Keywords: Perception, difficult topics, basic science, certificates.

Introduction

For more than six decades after independence in 1960, Nigeria is still trapped in the web of underdevelopment. This has manifested in all segments of the Nigerian society including education. Nigeria has the human and material resources that when properly utilized will make her a developed nation, but it is sad to note that we still find ourselves among the community of the less developed countries of the world (Jeremiah, 2004). The indices of underdevelopment are very visible in all aspect of our economy including teaching and learning. Chinuezu (1978) observed that the Nigerian state of underdevelopment is not due to unavailability of human and material resources, also it is not because of the geographical location as a strategic nation, not because of her population structure but as a result of its backwardness in terms of entrepreneurial engagement, Etuk (2004) in his view stated that developing nations of the world should see science as a means of providing the basis for sustainable manpower in modern society. He further stressed that such nations (developing) should expect science to make material contribution to life, improved agriculture, health care delivery and scientific professions.

The Federal Government and various stakeholders have since independence made some bold attempts to improve Basic science, teaching and learning of sciences in order to produce the needed manpower for the economic advancement of Nigeria. Despite these efforts students' achievement in Basic sciences had remained very low in secondary level of study. This persistent low or poor

achievement in science is a clear indication that science education in Nigeria is unsatisfactory and as such, needs more pragmatic approach than mere policy statement from its foundation i.e. the junior secondary school level.

It can be argued that the backwardness of science and technology breakthrough in Nigeria is due to the defect in the implementation of science education curriculum in the junior secondary schools. Wokocha (2000) opined that the need for developing nations like Nigeria to meet up with the developed Nations call for rapid improvement in the teaching and learning of science in our schools system starting from the primary school level. Science education when - properly implemented at the junior secondary school level will help in the development of science attitude in children. Such scientific attitude will help them in different trades and occupations they will find themselves in their latter life.

The government at various times has embarked on innovations aimed at improving the teaching and learning of science in junior secondary schools. Contrary to expectations, the result of the monitoring of learning achievement (MLA) of 1994 -1996 reported a low trend in science literacy among primary school pupils in Nigeria (Urebvu 2006). The low trend in scientific literacy has been attributed to many factors such as poor facilities, high teacher-pupils ratio, inadequate resource materials, libraries, laboratories, poor teaching method and lack of qualified science teachers, as well as perception of both the teacher and students (Jeremiah & Alamina 2006).

Hebb (1996) sees perceptions as an acquired characteristic because man learns gradually to identify and interpret objects or arrangement of objects. Perception is a process of utilizing signs so as to get their meaning. Stimuli from the environs are the signs, while objects are meanings. Perception is a set of variables that intervenes between sensory stimulation and awareness with the latter state indexed that by verbal or other mode of responses. Brunswick (1956) revealed that in any perception situation we take with us a full knowledge and past experiences, and this level of analysis is that of interpretative perception. Barber & Legge (1975) argued that perception involves operation of the senses and is affected in the shadow of the expectation, hope, needs and memories that makes up our internal world. To Wokocha (2000), the advocate of Gestalt psychology; perception is an inborn process. He further revealed that perception is determined by factors such as age, experience, and quality, arrangement of subject matter needs and values. Asime (2001) carried out a research on male and female students' perception of some concepts in mathematics. The t-test and ANOVA statistics used in explaining the data revealed a significant difference between male and female students perception of the mathematics topics as male students perceived the topics more difficult than their counterpart female students.

Among the factors also, the competence seem to be the most determining factor because a competent teacher who has a good knowledge of the content area of the curriculum can manipulate the variables to the learners' advantage. Njoku (2002) revealed that most secondary school teachers deliberately skip certain concepts that are due in the basic science curriculum because of their incompetence and lack of knowledge in explaining such topics. This means that students are denied the knowledge of certain scientific topics that stand strategic in the development of science process skills and scientific attitude among children. For basic science to achieve its rightful purpose, effort should be geared towards the teachers' mastery of the content area of the curriculum by identifying science topics which the teachers find difficult to teach and the Problems inherent in the teaching of such concepts. It is on this basis therefore that this research is carried out.

Statement of the problem

In recent times, subsequent governments have manifested a strong desire for technological advancement and the sciences in general, innovations and policies aimed at improving the teaching and learning of basic science, but all these have not yielded many dividends, Research works conducted on science and technology field of study aimed at improving the scientific soft skills amongst the youths focused mainly on the tertiary and secondary level with little or, no attention on the junior secondary level. Some research works such as Nwagbo (2002) and Giwa (2004), Felix & Peter. 2006 emphasized mainly on pedagogic and instructional strategies, teacher-student ratio, instructional material and evaluation of the content area, and of all, the development of basic science curriculum to enhance teaching and learning, without matching them with students and pupils' perceptions of scientific topics as they influence the implementation of the curriculum.

The questions that arose are, is perception of basic science topics among junior secondary school students favourable? Are some topics in the basic science curriculum perceived as difficult by male and female students? This study is an attempt to find solutions to this problem by investigating students' perception of topics in basic science in the junior secondary school certificates.

Purpose of the Study

The purpose of this study is to investigate the public and private school students' perception of the level of difficulty of topics in basic science. To this effect, the study was specifically designed to achieve the following objectives.

i) to determine the difference between public and private schools' students perceived level of difficulty of topics in basic science
ii). to determine the difference between boys and girls' students perceived 'level of difficulty of topics in the basic science

Research Questions

In order to guide this study, the following research questions were posed:

i. What is the difference between public and private school students perceived level of difficulty of topics in basic science?
ii. What is the difference between male and female students perceived level of difficulty of topics in basic science?

Hypotheses

The following null hypotheses were formulated to guide the research.

i) H_o - There is no significant difference between public and private school students perceived level of difficulty of topics in basic science?
ii) H_o - There is no significant difference between male and female students perceived level of difficulty of topics in basic science?

Population of the Study

The target population was made up of 4,500 JSS students in the sixty-seven (67) public and private junior secondary schools in Yenagoa Local Government Area of Bayelsa State. Junior secondary was choosing because it is the level that the students are first exposed to external examination on the subject basic science.

Sample and sampling techniques

A total of three hundred and seventy-three (373) junior secondary school basic science students drawn from sixty-seven (67) sampled schools in Yenagoa Local Government Area of Bayelsa State participated in the study, a total of 190 males and 183 females were used for the study. Selection of students was done through simple random sampling techniques. Taro Yamen as well as the table of minimum suitable sample size from population was used to draw and arrive at the samples size of (373) that was used for the study. Kpolovie. (2018), the sample size of 373 is well above the recommended minimum sample for a population of 4500.

Instrumentation

The major instrument used to gather information for this study was basic science topic checklist (BSTC). The instrument, (BSTC) consisted of twenty-one topics drawn from Business Studies curriculum to which a 4-point rating scale was attached. The respondents were required to rate the level of difficulty in learning of the topics. Rating includes: very difficult (VD), difficult (D), easy (E), and very easy (VE). The instrument was administered to students in order to assess their perceived levels of difficulty of topics in between male and female students perceived level of difficulty of topics in basic science.

Validity and Reliability of Instrument

The instrument was validated by two instructional material specialists and three experts in measurement and evaluation. The instrument was later trial tested in four (4) schools using fifty (50) male students and fifty female students. outside the sampled frame that met the criteria but could not be used for the main study. The result yielded a reliability coefficient of 0.75 which was established using Pearson product moment correlation coefficient. This was considered adequate for the study.

Administration of Instrument

The instrument was administered by the researchers to the subjects. The administration of the instrument lasted for (10) days that is two weeks. All the copies of instrument administrated were completed and returned. Data collected were analysed using t-test.

Results:

The data collected were analysed using means for descriptive statistics while the tenability of the hypotheses formulated for the study was done using t-test, the choice of t-test was not out of place for such large sample. Nwankwo, (2014),

From the analysis of data for research question 1 from table 1, there was no significant difference between means of public and private school students perceived level of difficulty of topics in business studies? This is evident in the calculated mean of 59.99 for public school, while private schools had a mean of 56.88 respectively,

Also, the descriptive statistics for research question 2 using data from table 2, shows that there was no significant difference between the means of male and female students perceived level of difficulty of topics in business studies? This is evident in the calculated mean of 45.10 for male students and 47.89 for female students respectively. This shows that public and private school students sees the level of difficulty in topics business study as the same, while the male and female student the same perceived level of difficulty of topics in business studies.

H_o1: There is no significant difference between public and private school students perceived level of difficulty of topics in business studies?

Table 1: t-test analysis of responses of students perceived level of difficult topics in Business Studies in public and private schools.

School students P<.05	N	X	SD	DF	T-cal	T-Cri	Decision
Public	193	59.99	8.99	171	2.78	1.96	*
Private	180	56.88	7.79				

NS = Not significant at .05 alpha level

As shown in table 1, the calculated t-value 2.78 is greater than the critical t-value 1.96. Thus, the null hypothesis is rejected. This implies that there exists a significant difference between public and private school students perceived level of difficulty of topics in business studies.
Table 1 also shows that the public-school students perceived level of difficulty of topic in business studies is higher than that of the private school students with mean of 59.65 and 56.88 respectively.

H_o2: There is no significant difference between male and female students perceived level of difficulty of topics in business studies?

Table 2: t-test analysis of responses of male and female student's perception of the level of difficult topics in Business Studies.

School students P<.05	N	X	SD	DF	T-cal	T-Crit	Decision
Male	190	45.10	5.63	17	0.88	2.11	NS
Female	183	47.89	6.16				

NS = Not significant at .05 alpha level

As shown in table 2, the calculated t-value 0.88 is less than the critical t. value 2.11. Thus, the null hypothesis stating there is no significant difference between male and female students perceived level of difficult topics in Business Studies was retained. This implies that there exists no significant difference between male and female students perceived level of difficult topics in the Business Studies. However, the table shows that the perceived level of difficulty of business studies topics amongst female students is greater than that of their male counterpart with mean of 47.87 and 45.10 respectively.

Discussion of Findings

The finding in hypothesis one indicated that public school students perceived level of difficult topics was greater than that of private schools. The findings from hypothesis two also showed that a significant difference exists between private and public-school students perceived level of difficulty in basic science. This could be attributed to the nonchalant attitude of public school teachers toward the teaching and learning of basic science. It could also be attributed to the ineffective supervision of instructional methods as characterized by the public school system. This is in agreement with the study of Dema (1998) who noted that instructions in private schools are better supervised than those in public

schools. Thus, students in public schools are bound to perceive the basic science more difficult than those in the private schools.

The findings from hypothesis two indicated that female students perceived level of difficulty was higher than that of their male counterpart. However, the difference in the level of perception was not significant. This could be attributed to the fact that the same instructional materials, the same teaching aid as well as the same teachers are responsible for all of the learning out comes in junior secondary schools. The insignificant difference could also be as a result of the fact that both the male and female students were trained in tertiary institutions with similar learning conditions.

The finding from this work contradicts the position of Asime (2001) who noted that teachers in public schools perceived mathematics concept more difficult than those from private schools. On the other hand, the study is in line with the view of Njoku (2002) who noted that public schools have more qualified teachers thus expect a low perceived level of difficulty of science topics.

Conclusion

From the finding of this study, it could be concluded that,

- Students in public schools perceived the basic science topics more difficult than those in private schools.
- Female students perceived the topics in basic science more difficult than the male students.

Recommendations.

Based on the conclusions the following recommendations are made:

- Proprietors of private schools should recruit more qualified science teachers in the teaching of basic science.
- Both male and female students should be given equal opportunity to study their times both at home and in the school environments.
- Both male and female students should be exposed to skills acquisition training, workshops, seminars and conference to update their knowledge on recent innovations in basic science.
- Ministry of Education should establish effective curriculum monitoring and evaluation procedure for schools.
- Students in both private and public schools should be exposed to technological teaching aid, debate, quiz etc on topics relation to basic science, innovation and technology education, and sciences dynamics, this will awaken their interest and orientation in science and technology.

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