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TOWARDS THE DEVELOPMENT OF SCIENCE EDUCATION: A CRITICAL ANALYSIS OF THE PERCEPTION OF PHYSICS BY THE SECONDARY SCHOOL STUDENTS IN SOME SELECTED SECONDARY SCHOOLS IN ABEOKUTA SOUTH LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

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Abstract
The teaching and learning of physics is of great interest to teachers, pupils and at large, any developing nation as Nigeria. This study looks at the perception of the subject by the pupils with respect to gender and the supposed abstract nature of the subject. The instrument used for the study is a self-developed validated questionnaire. The analysis tool used was simple percentages. The result revealed that gender difference, teaching style and the nature of the subject are issues bothering the students. The research is of the opinion that if the recommendations made are followed, we may positively change the perception of students on physics.

Keywords: *Perception, Physics, Secondary School Students, Abeokuta South LGA and Nigeria*

Background to the Study

Many researchers have tried to define and also look at the meaning of physics..... (Obayan 2003) believes that physics is an important science subject that makes immense academics demands on students in its learning. The learning of physics is difficult as best and almost impossible at worst but because of its enormous importance to science and technology there is understandably huge interest in student achievement in physics. However, so many factors militate against this. Considered in this work are background of the pupils, the sex and the abstract nature of the subject as mentioned by omolewa(2001) and kolawole (2007)

Research questions

i Is physics too abstract to be understood by the student
ii Can gender difference be a factor in the learning of physics

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Methodology

The survey research design was used in this study. A total of one hundred (100) secondary school students offering physics were drawn from five (5) secondary schools in Abeokuta south local government of Ogun state in Nigeria.Structured questionnaire items with five point likert-scale was used as the instrument. The instrument was validated and experts were consulted for its reliability.Simple percentage was used to analyse the result.

Literature Review/ Theoretical Framework

The supposed abstract nature of physics

According to Jone (2000), physics is perceived to be a difficult course because of the abstract nature of physics. Yemmy and Padilla (2000) considered the abstract nature as caused by language or choice of words when he explained the word 'POWER' and 'ENERGY'. Another issue is that of misconception of questions which according to Ehindero(2000), Bayah(1999) and Ivowi(2003) lead to wrong responses. In a study to buttress the above, Lawrenz(2002) found out that the students who understand "active physics", score higher in the subject. Related to this is the close relation between the subject and mathematics. Zhus (2001) noted that there is a strong link between physics and high mathematic (further mathematics) and this was supported by Hewson (2003) and Porter (2006).

Gender difference as a factor in the learning of physics

According to Whitelaw (2000) sex is the most important variable related to pupils' attitude to science. What has remained the main locus of great concern in field of science are the biases and misconception about women and science (Erinosho 2005). (Awoderu 2002, Kennedy (2000), and Erinosho (2005) provided reports that there are no longer distinguishing difference in the cognitive, affective and psychomotor skill achievement of students in respect of gender.

However, Kolawole (2007) found that male student performed better than female student in the cognitive, affective and psychomotor skill achievement and this has been earlier mentioned by Kennedy (2000) that certain vocations and professions have traditionally been regarded as men's (medicine, engineering, architecture) and others as women's (nursing, catering, typing arts etc).

In another work, Hoffman (2002), Lawrenz et al (2009) and Lorenzo et al (2006) in similar studies found that females are less likely to take high school physics and making more negative shift in attitude towards physics.

Jones (2000) and Aigbomian (2002) believe that male have more positive attitude towards science than females and that there is still a bias against physical sciences held by girls suggesting that an individual level the overwhelming majority of girls still choose not to do physical science , Osborne (2003)

Discussion of results

Research question 1: Is physics too abstract to be understood by the students?

Table 1

S/N	ITEMS	A(%)	SA(%)	U (%)	D (%)	SD(%)
1.	Terminologies used in physics makes the learning of physics difficult.	48(48)	25(25)	3(03)	17(17)	7(07)
2.	Teacher teaching physics makes it difficult for the student to understand.	34(34)	44(44)	0(00)	17(17)	5(05)
3.	The use of indigenous language is a better method for teaching physics.	27(27)	39(39)	1(01)	20(20)	13(13)
4.	Physics is all about calculation.	3(03)	17(17)	2(02)	12(12)	66(66)
5.	Physics is too abstract to be understood by the student	18(18)	53(53)	1(01)	21(21)	7(07)

More than 70% of the respondents are of the opinion that terminologies used in physics makes it difficult while 78 pupils (78%) believe that it is the teacher that makes the subject difficult. It is interesting to note that more than 60% of the population for this study would want physics taught in indigenous language. This table also reveals that 71% of the students are of the opinion that physics is too abstract to be understood by them and this is in line with the findings of Jones (2000), Yemmy and padila (2000) and Obayan (2007)

Research Question 2: Is gender difference a factor in the learning of physics?
Table 2

S/N	ITEMS	A (%)	SA (%)	U (%)	D (%)	SD (%)
1.	Female students perform below expectation in physics.	34(34)	12(12)	4(04)	41(41)	9(09)
2.	Female student should be given more attention during physics.	45(45)	40(40)	1(01)	9(09)	5(05)
3.	Female teachers are more efficient than their male counterparts.	39(39)	21(21)	2(02)	26(26)	12(12)
4.	There should be a special method for teaching physics to female students.	37(37)	25(25)	5(05)	20(20)	13(13)
5..	Male student perform better than female students	35(35)	27(27)	1(1)	12(12)	25(25)

As to whether female students perform below expectation in physics, the respondents almost split into two (46:50), however, 85% agreed that female students need more attention in physics while 62% of them are of the opinion that there should be special method for teaching physics to female students.62% latter confirmed that male students perform better in physics than female. All the findings above are in agreement with the those made by Aguele(2008) and kolawole (2007), Hoffman (2002) and (Haussler 2002) which according to them that male student perform better than female students in the cognitive, affective and psychomotor skill achievement.

Conclusions and Recommendation
The followings are the findings of this work

1 Male students perform better in physics than female
2 Most female students would prefer spcial method of teaching them physics
3 Physics teachers most times present the subject difficult
4 Physics itself is abstract in nature

Based on these findings, we recommend that re training programme should be organized for physics teachers with view to improve their skills and to be able to present the subject less abstract as much as possible.

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