

Attitude And Perceptions Of Student's Towards Learning Of Physics In Colleges Of Education Affiliated To Delta State University, Abraka

Ijeh Rufus O.¹, Onah Daniel U.², Asarhasa Peter³

1 College of Education, Agbor 2 Ebonyi State University, Abakaliki 3 College of Education, Warri

Abstract

The study is aimed at evaluating the attitudes and perceptions of students towards learning of physics in the two colleges of education affiliated to Delta state university, Abraka. A questionnaire was employed as research instrument and administered to seventy (70) students that are in 100, 200 and 300 level students. The respondent's selection from one of the four (4) options was used for the analysis of data using a likert type scale. The results of the research questions were expressed in percentages and most of the students had negative attitude towards learning of physics primarily due to the abstract nature of the subject and method of teacher centred and the learning environment. Based on the findings of the study, students can learn physics better if they re-orientate themselves and develop positive attitude in addition to improvement in teaching methodologies. The study recommended that the college management should put in place adequate machineries that will elicit students' attitude and perception towards learning of physics.

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I. Introduction

Attitude could be described as the manner an individual thinks or responds to an issue or event that characterizes his inner mind by means of behaviour. The kind of attitude and perception of students on a particular subject influences their academic performance. Though the concept of attitude towards science is a bit hazy but the advancement of positive attitudes towards learning science remains a major source of concern especially in education sector. Scientific attitude has been adjudged as one of the most important outcome of science teaching and which propels students for critical thinking and reasoning towards solving problems. However, teaching methodology and learning environment have been recognized as dependent variables on attitude of students towards learning of science and its level of exposure (Crawley, 1992). Therefore, positive attitude and perception towards science can be viewed as relevant factors in learning science which enable students aspire greatly in scientific career with a view to solving problems of the world (George, 2006; Osborne et., 2003). It is therefore imperative that the stake holders in education sector need to understand and appreciate that attitude of students towards learning of physics is a potent tool which determines the level at which students can acquire the necessary skills that can help them integrate into the society especially now that unemployment is ravaging the country (Lee and Kim, 2018; Sturgis & Allum, 2004). I am quite optimistic that no nation can advance economically without creating adequate scientific and technical manpower that will not only turn around the economy but also facilitate its' global competitiveness.

Physics is the study of matter and its interaction with energy at its most fundamental level. Though students with poor background in physics and lack interest in physics perceive the subject as abstract which often attracts fewer students compared with other science subjects like chemistry and biology at all levels of study (Williams et al., 2003). The intermittent misconceptions that physics is an abstract subject is hinged on the negative attitude of students and the methodologies adopted by teachers (Asikhia, 2010; Craker, 2006; Akanbi, 2003). The study of physics has provided a good understanding of science and technology in which a nation can rely upon for wealth creation. The underlying foundation and understanding of physics from secondary level is very crucial since it is the basis of engineering and technology upon which a nation can compete effectively at global market. This attest to the fact that many of the tools on which scientific and technological advancement strongly depend on the underlying principles in physics (Isaac et al., 2020). The study of physics enables students understand the fast-growing technological changing society which ultimately culminate into innovations and inventions in various areas (Jegade & Adedayo, 2013). Therefore, it is expected that in this era of technological advancement, it would be expected that the number of students studying physics should increase geometrically. However, reports suggest that there are sharp reductions in the number of students studying physics in universities or other institutions of higher learning (Okeke, 2012; Barmby & Defty, 2006;

Galili, 2010). Most times, students who are denied admission in their preferred professional courses such as medicine, pharmacy, engineering, architecture etc. are offered admission to study physics at last contrary to their cravings. Furthermore, some of the students that eventually accept the admission offer to study physics contrary to their desire presumes that rather than being at home for a session, they could stand another chance of seeking for admission in subsequent Unified Tertiary Matriculation Examinations (UTME) or hope to obtain change of course form for the course of their choice at the end of the academic session. This plan makes them not being serious in their present study of physics due to lack of interest resulting to negative impact on learning attitude. Researchers have also observed that students' perceptions and attitude determine performance in a subject (Shuell, 2011). However, teaching and learning of physics at all levels and most importantly, at higher level based on this research have received minimal output compared with other courses in sciences due to lack of interest (Hidi et al., 2004; Lavonen et al., 2012).

Purpose of the Study

The purpose of the study is to find out the attitude of students towards learning physics in colleges of Education affiliated to Delta state university, Abraka and to examine their performance in physics courses using a valid questionnaire.

Research Questions

The questions were designed and formulated by the researcher based on the theoretical framework in accordance with the questionnaire items. This was done to ensure that responses from the students could be properly analyzed.

This study addressed the following questions:

- How do students generally perceive physics?
- Does lecturing method influence students' attitudes towards learning of physics?
- Does learning environment influence students' attitudes towards learning of physics?

Sampling design and Technique

The study was a descriptive survey research which was designed based on administration of questionnaire. The study population for the study comprised of Delta State College of Education Agbor, located in Delta North Senatorial district and Delta State College of Education, Warri located in Delta South Senatorial district with similar lecture environments. These two Colleges of Education are affiliated to Delta State University, Abraka for their degree programs. A total of seventy (70) students that were used as samples for the study are only limited to 100, 200 and 300 level students as 400 level students were on teaching practice program at the time of the investigation for the research. For the population study, forty-five (45) students were male while twenty-five (25) were female students. The questionnaire was used to obtain information on students' perception and attitudes towards teaching and learning of Physics, methodologies adopted by the teachers and the impact of environment.

II. Methodology

The perception measuring scale was thirty items with four likes – type option. The scale used were SD=strongly disagree, D=disagree, SA=strongly agree and A=agree for data analysis. The total score for each perception category depicts their level of commitment on the perception shown within the category. The research questionnaires were divided into three segments showing how they perceive physics, the methodologies adopted by teachers and the learning environment.

Research Question 1

How do students generally perceive the study of physics? The answer to each research question is represented in percentage as shown in Table 1.

Table 1: Students perception towards learning of physics

S/N	ITEMS	SD	%	D	%	SA	%	A	%
1	Generally, I don't have interest in physics from secondary level	15	21.43	12	17.14	23	32.86	20	28.57
2	I perceive all physics courses as difficult	10	14.29	5	7.14	40	57.14	15	21.43
3	I perceive that almost all the courses are mathematics based	5	7.14	5	7.14	50	71.43	10	14.29
4	The practical aspect of physics is more of measurements and plotting of graphs	4	5.71	6	8.57	45	64.29	15	21.43
5	I perceive learning of physics irrelevant to my life.	2	2.86	8	11.43	49	70.00	11	15.71

6	Physics lectures are usually between mid-days and evenings	28	40.00	19	27.14	10	14.29	13	18.57
7	The teachers believe that I should be abreast with fundamental concepts in physics	9	12.86	10	14.29	31	44.28	20	28.57
8	The teachers always give assignments at the end of each lesson	32	45.71	15	21.43	6	8.57	17	24.29
9	The teachers usually give lesson notes to coordinators to copy in their absence	31	44.28	20	28.57	9	12.86	10	14.29
10	I perceive that physics graduates are only relevant in teaching	2	2.86	7	10.00	39	55.71	22	31.43

Research Question 2

Does method of teaching influence student's perception of physics?

Table 2: Effect of method of teaching

S/N		SD	%	D	%	SA	%	A	%
1	Our teachers do not encourage us to ask questions	8	11.43	10	14.29	40	57.14	12	17.14
2	Our teachers follow the course outline given to us	9	12.86	10	14.29	31	44.28	20	28.57
3	Teachers do not monitor our progress in class	14	20.00	16	22.86	26	37.14	14	20.00
4	Some of our teachers do not prepare their lessons before coming to the class	13	18.57	15	21.43	24	34.29	18	25.71
5	Our teachers do not notify us before administering test	10	14.29	9	12.86	32	45.71	19	27.14
6	We are not given opportunities to discuss on how we feel about physics	10	14.29	8	11.43	34	48.57	18	25.71
7	The method of teaching is not student centered	7	10.00	13	18.57	40	57.14	10	14.29
8	Our teachers use instructional materials	22	31.43	13	18.57	21	30.00	14	20.00
9	Our teachers do not make lessons interesting	24	34.28	16	22.86	16	22.86	14	20.00
10	Method of group discussion is encouraged	40	57.14	12	17.14	8	11.43	10	14.29
11	The laboratory instruments are not adequate for use during practical classes	45	64.29	13	18.57	5	7.14	7	10.00
12	The laboratory technologist does not direct us on how to perform the experiment during practical classes	23	32.86	11	15.71	20	28.57	16	22.86
13	The teachers use different methods for some of us with different abilities	50	71.43	12	17.14	5	7.14	3	4.29

Table 3: Effect of environment on learning of physics

S/N	ITEM	SD	%	D	%	SA	%	A	%
1	Lecture halls /laboratories are well ventilated	38	54.28	15	21.43	10	14.29	7	10.00
2	There are adequate seats and desks for students	9	12.86	10	14.29	31	44.28	20	28.57
3	Lecture halls/laboratories have adequate electricity and water supplies.	53	75.71	12	17.14	2	2.86	3	4.29
4	The lecture halls have interactive boards.	32	45.71	23	32.86	8	11.43	7	10.00
5	Teaching environment is near the business centres	12	17.14	8	11.43	30	42.86	20	28.57
6	Lecture halls are not renovated	9	12.86	12	17.14	33	47.14	16	22.86

III. Discussion of results

Data analysis was conducted in three stages for the investigation. The first stage analyzed results from the first questionnaire and the second stage addressed the second questionnaire while the third comprised analysis of the third questionnaire based on the environment. For the analysis of the data secured on students'

attitude towards learning of physics as presented in Table 1 and in form of histogram in fig. 1, a total of 60 students representing 85.7% perceived physics as mathematics based which makes it a difficult course for study. Hence, the subject is adjudged to be difficult culminating into negative attitude towards it. However, Bamidele (2004) observed that lack of interest in physics by students due to negative perception that physics is a difficult subject has drastically reduced enrolment and performance of students in physics. In addition, 87.16% of the students perceived that physics graduates are only relevant in the teaching career and predominantly in private schools, while 14.29% of the students are opposed that physics practical is more of measurements and plotting of graphs.

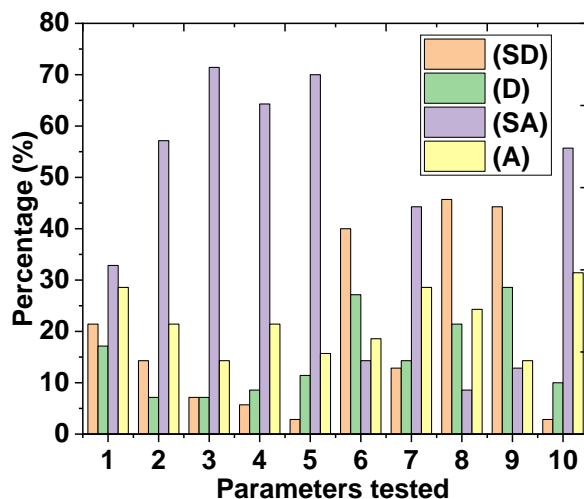


Fig. 1: Histogram on Students perception towards learning of physics

Furthermore, using data obtained on how method of teaching influence student's perception of physics as shown in Table 2 and in form of histogram in fig. 2, it was discovered that 71.43% of the students are of the opinion that the method of teaching is teacher centred which resulted to geometric increase in negative attitude of students towards learning of physics while only 11.43% agreed that teachers use different methods of teaching. Also discovered in the analysis was that 74.28% of the students confirmed that they were not given opportunities to discuss how they feel about physics. Furthermore, % 27.05% disagreed that their teachers follow the course outlines while 73% agreed that most physics teachers follow the course outline. According to Palmer, interest could be generated during lesson if students are given opportunity to discuss on how they feel about the course or involved in inquiry skills lesson (Palmer, 2009). Also, studies carried out by researchers confirmed that lack of interest in science subjects could be the manner in which these subjects are taught in schools and other prevailing factors. Hence, there exists several agitations at conferences on the need for education stake holders to enforce a total shift from teacher centred learning to student centred learning in order to stimulate students' interest in learning (Murphy & Beggs, 2003; Onwe & Uwaleke, 2019). Also, researchers supported that learner-centered method is quite effective if skilled and abstract subjects are taught by means of demonstration (Ogwunte, 2006; Moye, 2010; Palanissamy et al., 2017).

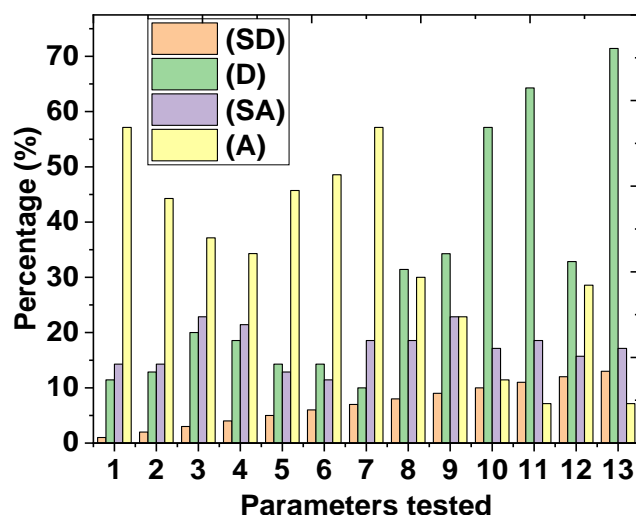


Fig. 2: Histogram on effect of method of teaching

It is imperative that academic achievement of student's is not only based on intelligence but with several lots of components of learning environment (Lizzio et al., 2002). Therefore, creating of a conducive learning environment which include; temperature, lighting, and noise control must be the concern of educators. (Murugan & Rajoo, 2013). In analyzing the data on the effect of environment as shown in Table 3, it was observed that 7.15% only agreed that the laboratories are adequately equipped and electrified with regular water supply. Ajileye (2006) posited that insufficient resources such as science equipment, laboratories and teaching aids are major causes of poor performance in science. Furthermore, Akanbi (2003) stated that inadequate laboratory equipment and facilities herald to poor performance in Physics and shortage of quality of science teachers. The study carried out by Aiyelabegan (2003) showed that shortage of practical equipment and unconducive environment are salient factors that could affect student's performance in Physics.

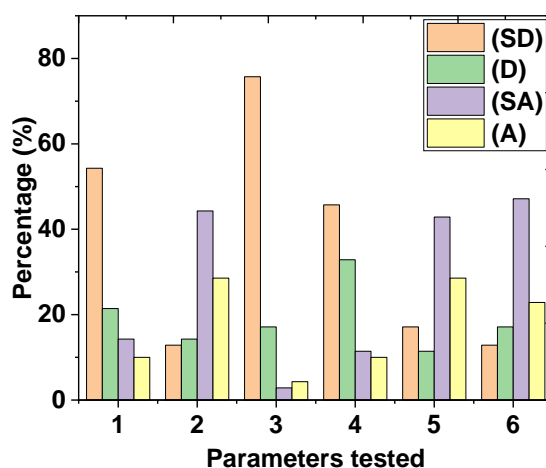


Fig. 3: Histogram on effect of environment on learning of physics

IV. Conclusion

It is observable that most of the students had negative attitude towards learning of physics primarily due to the abstract nature of the subject and not only is the method of teaching adjudged as teacher centred but that greater percentage of physics graduate are only employed as teachers. It is the responsibility of teachers to incorporate multimedia and practical demonstrations in addition to students centred approach of teaching in order to arouse student's interest and make physics relevant in their everyday lives. Based on the findings of the study, students can learn better if they re-orientate themselves and develop positive attitude towards learning of physics.

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