

Study Attitude and Academic Achievement in Biology at Secondary School Level in Mubi Metropolis of Adamawa State

Dr Dorcas Oluremi FAREO

Department of Educational Foundations, Adamawa State University, Mubi.

DOI: 10.29322/IJSRP.9.08.2019.p9253

<http://dx.doi.org/10.29322/IJSRP.9.08.2019.p9253>

Abstract- This study examined the study attitude and academic achievement in Biology at secondary school level in Mubi metropolis of Adamawa State. The population of the students was all students in public secondary schools in Mubi metropolis of Adamawa State, out of which a sample size of three hundred was drawn through stratified sampling technique. The research instrument for data collection was self-developed by the researcher. The validity of the instrument titled “Study Attitude and Academic Achievement in Biology at Secondary School Level Questionnaire” was carried out by an expert in Counselling Department, while t-test reliability method was used to carry out the reliability of the instrument, and the reliability co-efficient was 0.85. Data were analyzed using mean, Pearson moment correlation coefficient and t-test statistics. Students generally have a favourable attitude towards Biology. Attitude towards Biology is influenced by the perception and beliefs about Biology, learning abilities and competence in Biology and the previous performance and rankings in Biology in schools where the later poses a negative influence. The attitudes of the students also influence their confidence level in Biology mostly in terms of their feeling about getting good grades, tackling tasks and their desire to pursue Biology related courses in the future. It was concluded that achievements in Biology mostly can be attributed to the students attitude towards the subject, school environments, abilities, future interest, personal effort. It was recommended that school administration should advantageously make use of the learners’ positive attitude to create a strong inclination and culture of Biology as a subject in secondary schools where the students can score favourably like in any other subject and the curriculum designers and the teachers should articulate well on the usefulness and applicability of Biology in general so that students create positive minds towards the subject and subsequently strive to improve in the subject.

Index Terms- Study attitude; study habit; factors; study skills and academic achievement.

I. INTRODUCTION

Student attitude towards study is a complex construct. Attitude is a fairly stable emotional tendency to respond consistently to some specific object, situation, person, or category of people. It has three components: cognitive core, affective values and

behavioural action tendencies. The cognitive aspect of attitude consists of beliefs and ideas that a person has about the attitude object. The affective component includes the feelings of like and dislike toward any object, and the behavioural aspect consists of intentions to respond in a particular way toward the object. The making of perceptual and cognitive organization, with reference to formation of attitudes, depends upon the individual’s social environment. The process of social interaction, which starts from the family, brings about certain developments, including formation of attitudes (Uroog, 2000).

The study attitude is one of the main factors that affect academic performance of learners. Academic achievement is a function of study attitude of the students (Hussain, 2006). Numerous studies have reported a positive correlation between attitudes toward subject and achievement (Sarwar, Bashir & Alam, 2017; Ajayi, Kassim, Adewale & Abayomi, 2016; Crede & Kuncel, 2008; Ogunyemi & Hassan, 2011). Yet, in spite of the perceived importance of study habits and study attitudes to educational achievement, very little attention were given by academic institutions to improve these factors. This is manifested from the very low understanding level and the equally poor and deteriorating knowledge of many students which is still a great concern of educators, parents and governments (Riaz, Kiran, Malik cited in Aquino, 2011). This problem is pointed out by Hurlburt, *et al.* in Aquino, (2011) as contextual and systemic: it is rooted in the educational process shared by students and schools. Cultural differences among societies will be reflected in differences in attitudes among the individuals in those societies. In Pakistan, there is difference in rural and urban cultures, so the attitudes of rural and urban students are different. In rural areas, the people are comparatively simple and have positive attitudes toward life, so they are more hard-working. The social roles of males and females are quite distinct in Pakistan. The girls are trained to confine themselves in the house and to serve the family whereas boys remain outside the house most of the time and indulge themselves in different activities. In early adolescence, the peers can positively and negatively affect one’s attitude (Duke & Meckel in Sarwar, Bashir & Alam (2017).

Study attitude serves as an index of how we think and feel about studying. If the learning experience is not pleasant, then the resulting study attitude is not favourable. Successful learners adopt positive study attitudes. [McHale, Kim and Whiteman \(2006\)](#) stated that siblings are a fixture in the family lives of children and adolescents, and a body of work documents their role in one

another's everyday experiences as companions, confidantes, combatants, and as the focus of social comparisons. By extension the attitude of elderly ones towards studying will consequently affect the adolescent. From the foregoing, it could be deduced that Biology is one of the science subjects that is popular and studied by students in order to be enrolled in medical sciences programmes which concern with human life. Considering the reasons above, one would have expected the students of Biology to do well. Rather, their performances in various examinations are a thing of concern as many of the students who enrolled for biology examination are falling below credit pass in the subject. This assertion is supported by the examination performances of all Nigerian students in WASSCE and NECO.

Obe in Ajayi, Kassim, Adewale & Abayomi, (2016) referred to study habit as those behaviours that one manifest when studying such as listening to music, chewing kolanut, smoking coffee, taking memory pills and ant sleeping drugs, lying down while studying and so on. He said further that not all behaviours manifest during study positive rather those that are positive are called study habits. He concluded that study skills is the ability to acquire information, do mental processing of information for logical organization and understanding, re-reading and memorizing for a long time meaningful retention and recalling of information on important occasions such as during test or during examination situations.

According to Ball in Ajayi, *et al.* (2016), the following study habits usually contribute to unsatisfactory grade of students in tests or examinations: procrastination and overloading, lack of study time plan, not making notes while reading, truancy by skipping classes or refusal to take notes during lectures, laziness and ignorance, memorization and orphaning. He concluded that many committed students experience frustration and despair in schools not because they lack the potential, but because they do not have the appropriate study skills to learn. This assertion was supported by Rana and Kausar (2011) who said that many students fail not because they lack ability but because they do not have adequate study skills.

Some of the techniques of studying are: Robinson's Formula for Effective Study which is Survey, Question, Read, Recite and Review (SQ3R), Pauk's Formula for Effective Study (OK4R) which stand for overview, keywords in the study piece, Read, Review, Reflect and Review, Tussig's Formula for Effective Study (PAT) which stand for Preview, attack (Rob, Read, Precite) and Pauk's Formula for Effective Note-taking (5Rs) which stand for Record, Reduce, Recite, Reflect and Review. The SQ3R method stands for Survey, Question, Read, Recite and Review.

- Survey means get the best overall picture of what you're going to study BEFORE you study it in any detail. It's like looking at a road map before going on a trip.

- Question - ask questions for learning. Questions should lead to emphasis on the what, why, how, when, who and where to study contents. As you answer them, you will help to make sense of the material and remember it more easily because the process will make an impression on you.

- Read - reading is not running your eyes over a book or material, it means read in order to answer the questions you have asked yourself or questions that the instructor or author had asked. Always be alert to bold or italicized print. Also, when reading, be

sure to read everything, including tables, graphs, and illustrations because they can convey ideas better than the written texts.

- Recite and Review - the process of recite and review involve catabolization and anatomization process. When you recite, you stop reading periodically to recall and reflect on what you have read, while review on the other hand means breaking down of the information into smaller pieces or items which will make the retention easier, the more you rehearse, the more information you retain. A review is a survey of what you have covered and re-readings an important part of the review process.

Consequently, the need to improve student's study attitudes is deemed necessary to improve student's academic achievement. Accordingly, it is essential for schools to determine factors which affect these characteristics adversely propose remedial measures and employ strategies for the development of good study attitudes (Hussain, 2006). This is further supported by Hurlburt, *et al.* cited in Aquino, (2011) from their study which suggested that a confluent educational philosophy (systemic and holistic) and using confluent educational strategies (through which students' social-emotional and personal empowerment needs are met) may enhance the school experience, improve study attitudes, and ameliorate the high dropout rate among the students.

There are many factors that influence attitudes and achievement among adolescents. Some of the factors are associated with parental background and family environment. Other factors relate to individual characteristics such as study attitude, self-concept, locus of control, and achievement motivation. Still other variables are associated with schools influences such as class climate, teachers, and administrative styles (Talton and Simpson in Soltani, 2011). According to Osborne *et al.* in Soltani, (2011). Studies have incorporated a range of components in their measures of attitudes to science including: the perception of the science teacher; anxiety toward science; the value of science; self-esteem at science; motivation towards science; enjoyment of science; attitudes of peers and friends towards science; attitudes of parents towards science; the nature of the classroom environment; achievement in science; and fear of failure on course. The premise that improving study attitudes will lead to academic success, this study will be conducted to assess the study attitude and academic achievement in biology at secondary school level in Mubi metropolis of Adamawa State.

II. STATEMENT OF THE PROBLEM

The differences in attitudes of male and female students towards Biology have been an issue in many countries. The researcher observed that students' achievement in Senior Secondary school Certificate Examination (SSCE) in the study area has shown that the level of students' academic achievement in Biology over the years was not encouraging. Also the researcher observed that in the study area, the students with distinctions in Biology and other science subjects in West Africa Senior Secondary School Certificate Examination (WASSCE) and National Examination Council (NECO) are low. However, because of the nature of Biology as the most important science subject in medical sciences, one would expect majority of the students to have distinctions and credit passes in the subject.

This weak performance called for concern by researchers, parents, school administrators and other stakeholders in the education business. The low performance is likely to be caused by some factors like low cognitive ability, medical problems, gender, prematurity, teachers' variable, and government factors more especially the negative attitude of students towards their studies. Consequently, students get involved in very many activities outside their studies which are not helpful. They may engage in very many unlawful activities like, cultism, robbery, prostitution, spending much time on WhatsApp and tyranny, among other vices. Hence, this study sought to investigate the extent to which study attitude determined students' academic achievement in Biology at secondary school level in Mubi Metropolis of Adamawa State.

III. PURPOSE OF THE STUDY

The main purpose of this study is to investigate the study attitude and students' academic achievement in Biology at secondary school level in Mubi Metropolis of Adamawa State. The specific objectives of this study are to;

1. Determine the study attitude of secondary school students in Biology in Mubi Metropolis.
2. Determine the factors influencing study habits of secondary school students in Biology in Mubi metropolis.
3. Investigate the academic performance of secondary school students in Biology in Mubi Metropolis.
4. Examine the correlation between study attitude and achievement of secondary school students in Mubi Metropolis.
5. Compare the study attitude of secondary school students in the rural and urban areas in Mubi Metropolis.

Research Questions

The following two research questions were formulated to guide the researcher

1. What is the study attitude of secondary school students in Biology in Mubi Metropolis?
2. What are the factors influencing study habits of secondary school students in Biology in Mubi metropolis.

IV. RESEARCH HYPOTHESES

Three null hypotheses were formulated and will be tested at 5% level of significance

H₀₁: There is no significant difference between study attitudes of rural and urban secondary school students.

H₀₂: There is no significant difference between the study attitudes of female and male in secondary school students.

H₀₃: There is no significant relationship between study attitude scores and achievement scores at the secondary school level.

Research Design

This study adopted a survey research design to assess study habit and academic achievement in Biology at secondary school level in Mubi Metropolis of Adamawa state. An assessment of the study habit and students' academic achievement will be carried out to determine the relationship between study habit and students' academic achievement.

3.2 Population and Sample

The target population for this study comprised of all public secondary schools students of secondary schools with three hundred as sample size. From the population, six schools were selected by simple random sampling technique while three hundred students were selected by simple random technique. Therefore fifty students were selected from each school.

Research Instrument

A self-developed questionnaire titled 'Study Attitude and Academic Achievement in Biology at Secondary School Level Questionnaire' (ATAABSSLQ) was used to collect data. The questionnaire was divided into three sections. Section A comprised of demographic characteristics of teachers such as name of school, sex, class taught and school location. Section B comprised of 20 items on study attitude of secondary school students in Biology. Section C comprised of 15 items on the factors influencing study habit of secondary school students in Biology. The record of continuous assessment will be collected from sampled schools.

Validity and Reliability of Instrument

The validity of the instrument was carried out by an expert in Counselling Psychology in the Department of Science Education, Adamawa State University, Mubi. The reliability of the research instrument was carried out in Government Secondary School (GSS) Hong which is outside the study area. The researcher used test-retest reliability method. The first test was administered on 30 teachers, while the second test was administered within the interval of a week. The reliability coefficient was 0.85.

Data Collection and Analysis

The researcher with two research assistants administered the questionnaires and collected them on the spot. Thus, retrieved data were analyzed using descriptive and inferential statistics such as percentage and t-test analysis.

V. RESULTS

Research Question 1: What is the study attitude of secondary school students in Biology in Mubi Metropolis?

Table 1: Summary of responses relating to the study attitude of secondary school students

S/N	Items	A (%)	D (%)	Total (%)
1	When I don't understand something I ask the teachers.	213(71)	87(29)	300(100)
2	I exchange views with my classmates about what we study.	266(88.67)	34(11.33)	300(100)
3	In my exercise or study-works I concentrate on others which are already corrected.	153(51.00)	147(49.00)	300(100)
4	When I finish a test I read it again before handing it.	275(91.67)	25(8.33)	300(100)
5	When I study, I use to consult other books besides the adoption of Biology book to clarify or widen/increase knowledge.	248(82.67)	52(17.33)	300(100)
6	I revise frequently so as not to forget what I have learnt.	242(80.67)	58(19.33)	300(100)
7	To learn something, I have to understand it before.	173(57.67)	127(42.33)	300(100)
8	I read all the questions of the test before beginning to answer it.	197(65.67)	103(34.33)	300(100)
9	When I have to do some study-work, before starting, I read a lot about the theme, organize the ideas and write an outline.	168(56.00)	132(44.00)	300(100)
10	I ask questions on what I study and try to answer them.	157(52.33)	143(47.67)	300(100)
11	I study Biology daily.	203(67.67)	97(32.33)	300(100)
12	I feel distracted when I am studying Biology.	145(48.33)	155(51.67)	300(100)
13	I have a jotter that is used to take down note during Biology study.	207(69.00)	93(31.00)	300(100)
14	During Biology class, I take down note always.	265(88.33)	35(11.67)	300(100)
15	I always compare my class note with the Biology textbook.	226(75.33)	74(24.67)	300(100)
16	I always relax for 30 minutes after 2 hours study	172(57.33)	128(42.67)	300(100)
17	I always attained Biology class.	211(70.33)	89(29.67)	300(100)
18	I always study my Biology note before exams.	285(95.00)	15(5.00)	300(100)
19	I have a sense of mental pressure before examination.	163(54.33)	137(45.67)	300(100)
20	I feel afraid of examination failure.	297(99.00)	3(1.00)	300(100)

Table 1 shows that out of 300 respondents 212(71.00%) agreed with the statement that when I don't understand something I ask the teachers, while 87(29.00%) disagreed. Out of 300 respondents 266(88.67%) agreed that I exchange views with my classmates about what we study, while 34(11.33%) disagreed. Out of 300 respondents 152(51.00%) agreed with the statement that In my exercise or study-works I concentrate on others which are already corrected, while 147(49.00%) disagreed with the statement. Majority of the respondents 275(91.67%) agreed with the statement that when I finish a test I read it again before handing it, while 25(8.33%) disagreed. Also, majority of the respondents 248(82.67%) agreed with the statement that when I study, I use to consult other books besides the adoption of Biology book to clarify or widen/increase knowledge, while 52(17.33%) disagreed. Out of 300 respondents 242(80.67) agreed with the statement that I revise frequently so as not to forget what I have learnt, while 58(19.33%) disagreed. Out of 300 respondents 173(57.67%) agreed with the statement that to learn something, I have to understand it before, while 127(42.33%) disagreed. Out of 300 respondents 197(65.67%) agreed with the statement that I read all the questions of the test before beginning to answer it, while 103(34.33%) disagreed. Out of 300 respondents 168(56.00%) agreed with the statement that when I have to do some study-work, before starting, I read a lot about the theme, organize the ideas and write an outline, while 132(44.00%) disagreed with the statement. Out of 300 respondents 157(52.33%) agreed with the statement that I ask questions on what I study and try to answer them, while 143(47.67%) disagreed.

The table further shows that out of 300 respondents 203(67.67%) agreed that they study Biology daily, while 97(32.33%) disagreed. Out of 300 respondents 145(48.33%) agreed with the statement that I feel distracted when I am studying Biology, while 155(51.7%) disagreed. Out of 300 respondents 207(69.00%) agreed with the statement that I have a jotter that is used to take down note during Biology study, while 93(31.00%) disagreed. Out of 300 respondents 265(88.33%) agreed with the statement that during Biology class, I take down note always, while 35(11.67%) disagreed with the statement. Out of 300 respondents 226(75.33%) agreed with the statement that I always compare my class note with the Biology textbook, while 74(24.67%) disagreed with the statement. Out of 300 respondents 172(57.33%) agreed with the statement that I always relax for 30 minutes after 2 hours study, while 128(42.67%) disagreed with the statement. Majority of the respondents 211(70.33%) agreed with the statement that I always attained Biology class, while 89(29.67%) disagreed with the statement. Also, majority of the respondents 285(95.00%) agreed with the statement that I always study my Biology note before exams, while 15(5.00%) disagreed with the statement. Out of 300 respondents 163(54.33%) agreed with the statement that I have a sense of mental pressure before examination, while 137(45.67%) disagreed with the statement. Out of 300 respondents majority 297(99.00%) agreed with the statement that I feel afraid of examination failure, while 3(1.00%) disagreed with the statement.

From the result above it can be established that students attitude toward Biology is generally positive. This indicated that

Biology students in Mubi metropolis have positive attitude towards Biology and they love the subject.

Research Question 2: What are the factors influencing study habits of secondary school students in Biology in Mubi metropolis.

Table 2: Summary of responses relating to factors that influence study habits of secondary school students in Biology

S/N	Items	A (%)	D (%)	Total (%)
1	My parents always encourage me to study my books.	215(71.67)	85(28.33)	300(100)
2	I have my note and writing materials to take Biology note always.	213(71.00)	87(29.00)	300(100)
3	My Biology teacher doesn't miss his/her lesson.	196(65.33)	104(34.67)	300(100)
4	My Biology teacher gives us test three times per term and always mark and give back feedback.	202(67.33)	98(32.67)	300(100)
5	My Biology teacher always accompany every topic teach with practical.	127(72.33)	83(27.67)	300(100)
6	My colleagues always encourage me to read my books.	172(57.33)	128(42.67)	300(100)
7	My parents always employed lesson teachers to teach me Biology at home.	149(49.67)	151(50.33)	300(100)
8	My school Biology laboratory is well equipped.	143(47.67)	157(52.33)	300(100)
9	I always understand Biology teaching.	194(64.67)	106(35.33)	300(100)
10	I always take my breakfast before going to school.	283(94.33)	17(5.67)	300(100)
11	The Biology laboratory is always congested, and this discourage me from attending Biology practical.	162(54.00)	138(46.00)	300(100)
12	My Biology teacher is very good in explaining new topic.	172(57.33)	128(42.67)	300(100)
13	I don't have Biology textbooks.	94(31.33)	206(68.67)	300(100)
14	My parents always attend the PTA meetings.	156(52.00)	144(48.00)	300(100)
15	My Biology teacher always gives Biology notes to class captain to write for us.	163(54.33)	137(45.67)	300(100)

Table 2 shows that out of 300 respondents 215(71.67%) agreed with the statement that my parents always encourage me to study my books, while 85(28.33%) disagreed with the statement. Out of 300 respondents 213(71.00%) agreed with the statement that I have my note and writing materials to take Biology note always, while 87(29.00%) disagreed with the statement. Out of 300 respondents 196(65.33%) agreed to the statement that my Biology teacher doesn't miss his/her lesson, while 104(34.67%) disagreed with the statement. Majority of the respondents 202(67.33%) agreed with the statement that my Biology teacher gives us test three times per term and always mark and give back feedback, while 98(32.67%) disagreed with the statement. Out of 300 respondents 217(72.33%) agreed with the statement that my Biology teacher always accompany every topic teach with practical, while 83(27.67%) disagreed with the statement. Out of 300 respondents 172(57.33%) agreed with the statement that my colleagues always encourage me to read my books, while 128(42.67%) disagreed with the statement. Out of 300 respondents 149(49.67%) agreed with the statement that my parents always employed lesson teachers to teach me Biology at home, while 151(50.33%) disagreed with the statement. Out of 300 respondents 143(47.67%) agreed with the statement that my school Biology laboratory is well equipped, while 157(52.33%) disagreed with the statement.

The table further shows that out 300 respondents 194(64.67%) agreed with the statement that I always understand

Biology teaching, while 106(35.33%) disagreed with the statement. out of 300 respondents majority 283(94.33%) agreed with the statement that I always take my breakfast before going to school, while 17(5.67%) disagreed with the statement. Out of 300 respondents 162(54.00%) agreed with the statement that The Biology laboratory is always congested, and this discourage me from attending Biology practical., while 138(46.00%) disagreed with the statement. Out of 300 respondents 172(57.33%) agreed with the statement that my Biology teacher is very good in explaining new topic, while 128(42.67%) disagreed with the statement. Out of 300 respondents 94(31.33%) agreed with the statement that I don't have Biology textbooks, while 206(68.67%) disagreed with the statement. Out of 300 respondents 156(52.00%) agreed with the statement that my parents always attend the PTA meetings, while 144(48.00%) disagreed with the statement. Out of 300 respondents 163(54.33%) agreed with the statement that my Biology teacher always gives Biology notes to class captain to write for us, while 137(45.67%) disagreed with the statement.

From the results above it can be established that the factors that influence study habit of secondary school students in Mubi metropolis are my parents always encourage me to study my books, writing materials, Biology teachers punctuality in class, frequent assessment, practical class in Biology, encouragement by the peer group, lesson teacher to teach at home, proper understanding of the subject, proper feeding of the students, effectiveness and efficiency of Biology teachers, availability of

Biology textbooks, parental involvement in their children studies and the Biology teachers always give notes on what being taught to students.

Hypothesis Testing

Hypothesis 1: There is no significant difference between study attitudes of rural and urban secondary school students.

Table 3: t-test analysis of the differences between study attitude of rural and urban students

Variable	N	Mean	SD	df	t-cal.	t-crit.	P
Rural	100	231.30	47.78	298	2.578	1.960	P > 0.05
Urban	200	256.90	58.62				

*** Significant**

Table 3 reveals that t-cal. (2.578) is greater than t-crit. (1.960) at 0.05 level of significance. The null hypothesis, which states that there is no significant difference between study attitudes of rural and urban secondary school students, is rejected. Therefore, there is significant difference between study attitudes of rural and urban secondary school students.

Hypothesis 2: There is no significant difference between the study attitudes of female and male in secondary school students.

Table 4: t-test analysis of the differences between study attitude of female and male students

Variable	N	Mean	SD	df	t-cal.	t-crit.	P
Male	150	208.60	43.56	298	1.112	1.960	P > 0.05
Female	150	195.35	37.22				

*** Not Significant**

Table 4 reveals that t-cal. (1.112) is less than t-crit. (1.960) at 0.05 level of significance. The null hypothesis, which states that there is no significant difference between the study attitudes of female and male in secondary school students is accepted.

Therefore, there is no significant difference between the study attitudes of female and male in secondary school students.

Hypothesis 3: There is no significant relationship between study attitude scores and achievement scores at the secondary school level.

Table 5: Pearson correlation of attitude score and academic achievement

Variables	N	Mean	SD	df	r-calculated	r-critical
attitude score	300	201.48	40.64	598	0.266	0.087
Academic achievement	300	64.63	19.15			

***Significant**

Table 5 shows that the r-calculated (0.266) is greater than r-critical (0.087) at 0.05 confidential levels. The null hypothesis, which states that there is no significant relationship between study attitude scores and achievement scores at the secondary school level, is therefore rejected. This implies that there is a significant relationship between study attitude scores and achievement scores at the secondary school level.

VI. DISCUSSION

The findings of the study revealed that students study attitude toward Biology is generally positive. This indicated that Biology students in Mubi metropolis have positive attitude towards Biology and they love the subject which help them to achieved better results in the subject. This findings is in line with Valle (2009) who aimed at studying the relationship between university students' self-efficacy for performance and learning and their effort regulation. The researcher found that when students possessed a higher self-efficacy, they were more likely to put more effort into their academic studies. Similarly, Khan and

Ali (2013) enquired about the relationship between attitudes of students towards Science with their academic achievement and found that both the variables are interlinked and correlated. The higher the positive attitude of students towards Science, the more likely to get better results in their academics. Apart from all the above studies, a large number of studies (Ali & Awan, 2013; Tiwari & Anwar, 2015; Hacieminoghu, 2016; John, 2014) have also proclaimed that those students who possess positive attitude towards Science also do better in their academic achievement.

The result further revealed that the factors that influence study habit of secondary school students in Mubi metropolis are my parents always encourage me to study my books, writing materials, Biology teachers punctuality in class, frequent assessment, practical class in Biology, encouragement by the peer group, lesson teacher to teach at home, proper understanding of the subject, proper feeding of the students, effectiveness and efficiency of Biology teachers, availability of Biology textbooks, parental involvement in their children studies and the Biology teachers always give notes on what being taught to students. This finding agrees with Talton and Simpson in Soltani, (2011) who stated that there are many factors that influence attitudes and achievement among adolescents. Some of the factors are associated with parental background and family environment. Other factors relate to individual characteristics such as study attitude, self-concept, locus of control, and achievement motivation. Still other variables are associated with schools influences such as class climate, teachers, and administrative styles. Similarly, According to Osborne *et al.* in Soltani, (2011) studies have incorporated a range of components in their measures of attitudes to science including: the perception of the science teacher; anxiety toward science; the value of science; self-esteem at science; motivation towards science; enjoyment of science; attitudes of peers and friends towards science; attitudes of parents towards science; the nature of the classroom environment; achievement in science; and fear of failure on course.

Test of hypothesis one revealed that there is significant difference between study attitudes of rural and urban secondary school students. This finding is contrary to the reports of Dike, Anyanwu, Zachariah and Folashade (2018) who did not found significant difference between students performance in Chemistry, Physics and Biology from school to school. Similarly, Lawrence (2012) who also did not found significant difference between students' performance with respect to school environment i.e. urban and rural schools.

Test of hypothesis two revealed that there is no significant difference between the study attitudes of female and male in secondary school students. This finding agrees with Bhan and Gupta (2010) conducted a study for academic achievement and study habit among the students belonging to scheduled caste and non-scheduled caste group. The result revealed that sex has no significant impact on academic achievement and study habit of students. This finding is contrary to Singh (2011) who examined academic achievement and study habits of higher secondary students and the results indicate that girls and boys differ significantly in their study habits and academic achievement.

Test of hypothesis three revealed that there is a significant relationship between study attitude scores and achievement scores at the secondary school level. This finding agrees with Okpala (2006) who reported a positive relationship between students'

attitude and their performance in academics. Also Narmadha and Chamundeswari (2013) found that there exists a positive impact of learning Science on academic achievement. Even though most studies stated that there was a positive relationship between study attitude and academic achievement, there were few studies arguing the opposite. For example, in a study conducted by Chassie, O'Conner and Walther (2004

VII. CONCLUSION

Students generally have a favourable attitude towards Biology. Though Positive attitudes alone may not significantly predict good performance as shown by the students' grades, there are other mediating factors including student effort and commitment that connect attitude and achievement without which attitude alone may not reflect achievement. Students attribute their achievements in Biology mostly to the school environments, abilities, future interest and personal effort. Hence, the students should be motivated through persuasion, use of reinforcements, provision of learning resources and improving on teacher support which cuts across the home and the school environments.

VIII. RECOMMENDATIONS

Based on the findings of the study, the study makes the following recommendations:

- The school administration should advantageously make use of the learners' positive attitude to create a strong inclination and culture of Biology as a subject in secondary schools where the students can score favourably like in any other subject.
- The curriculum designers and the teachers should articulate well on the usefulness and applicability of Biology in general so that students create positive minds towards the subject and subsequently strive to improve in the subject.
- The Ministry of education, teachers and parents should ensure that performance of Biology among students is improved so as to dislodge the negative attitude and create a positive one on performance of Biology in secondary schools. This will counteract the effect of previous failures and rankings in the subject which may degenerate into negative school culture and definitely low performance.
- The parents and the teachers should explore other avenues to change the behaviour of students towards Biology and the interests of the students towards the subject. The students should be motivated through persuasion, use of reinforcements, provision of learning resources and improving on teacher support which cuts across the home and the school environments.
- The learners should be able to understand the need for a commitment to be fully engaged and to be willing to embrace logic behind every success in Biology so as to acquire the necessary knowledge and skills for examinations.

REFERENCES

- [1] Ajayi O. Kassim, M., Adewale, K. & Abayomi, Y. (2016). Study habits and students' attitudes as determinants of students' academic achievement in economics in senior secondary schools in Ogun State. *Nigerian Inquiry in the Humanities*, 2(1): 35-43.
- [2] Ali, M. M. & Awan, R. E. (2013). Changes in student attitudes regarding science when taught by teachers without experiences with a model professional development program. *School Science and Mathematics*, 113(3): 109-119.
- [3] Anyanwu, D. N. I., Zachariah, R. I. Folashade, B. S. (2018). Comparative study of the academic performances in Biology, Chemistry and Physics of male and female students in a Nigerian tertiary institution. *Journal of Education and Practice*, 9(20): 68-76.
- [4] Aquino, L. (2011). Study habits and attitudes of freshmen students: Implications for academic intervention programs. *Journal of Language Teaching and Research*, 2(5): 1116-1121.
- [5] Bhan, K. S. & Gupta, R. (2010). Study habits and academic achievement among the students +belonging to scheduled caste and non- scheduled caste group. *Journal of Applied Research in Education*, 15(1): 1-9.
- [6] Chassie, M.B., O'Conner, E. J. & Walther, F(2004). Expanded effort and academic performance. *Testing of Psychology*, 7 (4), 231-233.
- [7] Crede, M. & Kuncel, N. (2008). Study habits meta-Analysis, perspectives on psychological science, 3(6): 425-453.
- [8] Dike, J., Anyanwu, W., Zachariah, K. & Folashade, Y. (2018). Students' attitude towards the study of Chemistry, Physics and Biology in Nsukka Local Government Area, Enugu State. *African Review of Arts Social Sciences & Education* 3(1): 141-157.
- [9] Hacieminoglu, E. (2016). Elementary school students' attitude toward science and related variables. *International Journal of Environmental & Science Education*, 11(2), 35-52.
- [10] Hussain, A. (2006). Effect of guidance services on study attitudes, study habits and academic achievement of secondary school students. *Bulletin of Education & Research*, 28 (1): 35-45.
- [11] John, M. (2014). Students study habits and styles. Retrieved from www.Worldwide elearn.com.12/3/2018.
- [12] Khan, G. N., & Ali, A. (2012). Higher secondary school students' attitude towards chemistry. *Asian Social Science*, 8(6), 165.
- [13] Lawrence, F. P. (2012). Student perception of the classroom learning environment in biology, chemistry and physics courses. *Journal of Research in Science Teaching*, 13:351– 353.
- [14] McHale, S. M., Kimberly, A. U.& Whiteman, S. D. (2006). Sibling relationships and influences in childhood and adolescence. *J Marriage Fam.* 2012 October 1; 74(5): 913–930.
- [15] Narmadha, U.& Chamundeswari, S. (2013). Attitude towards learning of science and academic achievement in science among students at the secondary level. *Journal of Sociological Research*, 4(2), 114-124.
- [16] Ogunyemi, A.& Hassan, E. (2011). Academic self-efficacy, study habit and attitude in school-based assessment, *African Journal for the Study of Educational Issues*, Vol 4 Retrieved at <http://ajeduonline.org/3-6.php>, Retrieved on February 21, 2018.
- [17] Okpala, N. P. (2006). Teacher attitudinal variables in instructional assessment practices as correlates of learning outcomes in physics. Unpublished Ph.D Thesis, University of Ibadan, Ibadan.
- [18] Rana, S. & Kausar, R. (2011). Comparison of study habits and academic performance of Pakistani British and White British Students. *Pakistan Journal of Social and Clinical Psychology*, 9 (1), 21 - 26.
- [19] Sarwar, M., Bashir, M.& Alam, M. (2017). Study attitude and academic achievement at secondary level in Pakistan. *Journal of College Teaching & Learning*, 7(2): 55-60.
- [20] Singh, Y .G. (2011). Academic achievement and study habits of higher secondary students. *International Referred Research Journal*, 3(27): 2.
- [21] Soltani, A. (2011). Attitude towards Biology and its effects on student's achievement. *International Journal of Biology*, 3(4): 100-104.
- [22] Tiwari, S. & Anwar, E. (2015). Environmental awareness and attitude towards science: A correlation study. *ParipeX - Indian Journal of Research*, 4(2), 197-198.
- [23] Uroog, J. (2000). Determining the causal ordering between attitude toward mathematics and achievement in mathematics. *American Journal of Education* (May 2004) issue, volume 110, Retrieved November 20, 2018, from <http://www.ocair.org/files/knowledgebase/willard/MathAttitAb.pdf>
- [24] Valle, A. (2009). Academic goals and learning quality in higher education students. *The Spanish Journal of Psychology*, 12 (1), 96-105.

AUTHORS

First Author – Dr Dorcas Oluremi FAREO,
Department of Educational Foundations,
Adamawa State University, Mubi.
E-mail: dorkyfareo@gmail.com