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STUDY HABIT AND SELF- EFFICACY AS CORRELATES OF UPPER BASIC STUDENTS' ACHIEVEMENT IN BASIC SCIENCE AND TECHNOLOGY IN AKWA- IBOM STATE

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Abstract

The purpose of the study was to determine study habit, self-efficacy as a correlates of upper basic students' academic achievement in basic science and technology. Three research questions and three hypotheses were formulated. The study adopted a correlation survey design and Akwa-Ibom State was the area of the study. The sample size consisted of 1800 Upper Basic 3 Basic Science and Technology students from 45 public secondary schools. Three types of sampling methods namely - purposive, proportionate and simple random samplings were used. Purposive sampling was used to select nine Local Government Areas from the state. Proportionate random sampling was used to draw 5 schools from each Local Government Area giving 45 schools. This is because the populations of schools in the selected areas were not similar. Simple random sampling technique of 40 students per school was further used to select the students who participated in the Study. Two instruments-study habit (SHSQ) and self-efficacy (SESQ) questionnaires were used to collect data for the study. The instruments were validated and the reliability of.78 for SHSQ and .81 for SESQ were established respectively. The instruments were administered on the students with the help of Nine (9) research assistants. Each instrument took the respondent's about 40 minutes for its completion and three weeks was used for its administration. Basic Science and Technology achievement records of the participant used as achievement score in the study was obtained from school's terminal examination records. All research questions were answered using Pearson Product Moment Correlation Coefficient and the hypotheses were tested at 0.05 significant levels using regression statistics. The result reveals that, there is a low negative significant relationship between study habit, self-efficacy and achievement in basic science and technology in Akwa- Ibom State. It also showed that the combine independent variable has a low positive relationship with the achievement scores.

Based on the finding of this study it is recommended that students study habit and self-efficacy should be enhance by exposing the student to activity teaching strategies that will give the students an avenue to actively participate in the teaching leaning process.

Keyword: Study Habit, Self- Efficacy, Upper Basic Students, Basic Science, Technology and Akwa Ibom State.

Introduction

Education is a lifetime process that brings about change in behavior in the desired way. It is the process of the acquisition of knowledge, skills, and value. Education is one of the most important discoveries of mankind. It is the main factor, which amounts to the development of civilization. No nation can grow above the quality of its educated citizen. Thus, the purpose of education is to assist individuals to maximize their potential for the most efficient self and national development (Gambari and Yusuf, 2015).

In formal education system, several subjects are taught to students with the view of helping them to acquire the needed knowledge and skill for effective human and national development. One of such subject is sciences. Science is a systematic study of nature and the interaction existing within the environment. Science is presumably studied to enable its adherent to achieve the much needed scientific knowledge and skills that will make the country globally recognized.

Since the introduction of integrated science in the past four decades in Nigeria and now Basic Science and Technology in recent times the subject is not doing very well in terms of student's academic achievement and their changes in attitude towards becoming scientifically literate citizenry. The Basic Science and Technology curriculum, amongst others, is expected to enable the learners develop interest, acquire basic knowledge and skills, prepare learners for further studies, apply their scientific and technological knowledge and skills to meet societal needs, take advantage of the numerous career opportunities offered by the subjects and become prepared for further studies in science and technology (Federal Ministry of Education, 2012).

However, Students' academic achievement in Basic Science and Technology as reported by (Usendia 2017; Sambo 2023) remains poor. Several researches aimed at improving students' academic achievement have greatly focus on teachers teaching methodology (Chinweoke 2011; Achufusi-Aka 2011) at the expense of student's psychological perspective such as study habit and self-efficacy. Other such studies on study habit and self-efficacy focused on single subject disciplines such as Chemistry, Biology, and Physics etc. at the senior secondary school levels. (Adeyemo 2011, Okesina 2019, Akanazu 2021). From their report it is ascertain that study habit and self-efficacy could enhance student's academic achievement in sciences. Be that as it may, it could inferably be noted that study habit and self-efficacy could also affect upper basic students' academic achievement in Basic Science and Technology. Hence the need for the present study to investigate study habits and self-efficacy as correlates of Upper

Basic student's academic achievement in Basic Science and Technology in Akwa Ibom State.

Statement of the Problem

The essence of introducing Basic Science and Technology into our school system (at the basic school level) was for it to stem the tides of students' poor achievement in sciences at the senior and tertiary level of education. This was with the view that once the foundation is perfectly laid at this level, students will be willing to offer sciences at the senior and tertiary levels. But the reverse in recent time is the case as there is a reported poor academic achievement in Basic science and technology. There is also a serious drift from sciences immediately students live upper basic school levels of education. Researches to uncover the perverse problem only focuses on teachers teaching methodology at the expense of students' psychological disposition hence the need to carry out the presence study to determine whether any correlation exist between study habit, self-efficacy and Upper basic student academic achievement in Basic Science and Technology in Akwa- Ibom State.

Purpose of the Study

The purpose of the study is to investigate study habit and self-efficacy as correlates of upper basic student's achievement in basic science and technology in Akwa-Ibom state**.** Specifically, the study will determine the:

1) Relationship between study habit scores of Upper Basic school students and their achievement scores in Basic Science and Technology in Akwa-Ibom State.
2) Relationship between Self-efficacy scores of Upper Basic School students and their achievement scores in Basic Science and Technology in Akwa-Ibom State.
3) Relationship between study habit scores, self-efficacy scores and achievement scores of upper Basic School students in Basic Science and Technology in Akwa-Ibom State.

Research Questions

The following research questions guided the study:

1 What is the relationship between study habit scores of Upper Basic school students and their Basic Science and Technology achievement scores in Akwa-Ibom State?
2 What is the relationship between self-efficacy scores of Upper Basic school students and their Basic Science and Technology achievement scores in Akwa-Ibom State?
3 What is the relationship between study habit scores, self-efficacy scores and achievement scores of Upper Basic school students in Basic Science and Technology in Akwa-Ibom State?

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. There is no significant relationship between study habit and academic achievement scores in Basic science and Technology among Upper Basic school students in Akwa-Ibom State.
2. There is no significant relationship between Self-efficacy and academic achievement scores in Basic Science and Technology among Upper Basic school students in Akwa Ibom State.
3. There is no significant relationship between study habits, self-efficacy and academic achievement in Basic Science and Technology among Upper Basic school students in Akwa-Ibom State.

Method

The correlation survey design was used in this study. The correlation survey study according to Nworgu (2015) seeks to establish what relationship exists between two or more variables. The area that was covered in this study is Akwa-Ibom State. The population of this study comprised of 20,655 Upper Basic 3 Basic Science students in 237 public secondary schools in the 31 Local Government Area of Akwa-Ibom State in 2022/2023 academic session.

The sample size for this study was 1800 Upper Basic 3 Basic Science and Technology students from 45 public secondary schools in Akwa-Ibom State. Three types of sampling methods namely - purposive, proportionate and simple random samplings were used. Purposive sampling was used to select nine Local Government Areas from the state. Proportionate random sampling was used to draw 5 schools from each Local Government Area giving 45 schools from the state. This is because the populations of schools in the selected areas were not similar. Simple random sampling technique of 40 students per school was further used to select the students who participated in the Study. Two instruments were used to collect data for this Study. They are Study Habit Scale Questionnaire (SHSQ) and Students' Self-Efficacy Scale Questionnaire (SASQ). Study Habit questionnaire as well as the Self-efficacy scale questionnaire consisted of 25 statements each which sort information on student's Study Habit and Self-Efficacy. A four-point rating Scale of SA - strongly agree, A – agree, D - disagree, SD - strongly disagree was used in designing the questionnaire.

To ensure the validity, the instruments were given to three experts and two professional teachers. The three experts were from faculty of Education Nnamdi Azikiwe University while the two professional teachers were Basic Science and Technology teachers not below the Rank of Principal II in the Area of the study. The validators were requested to peruse the items of clarity, proper wording of items, appropriateness and adequacy of the items in addressing the purpose of the study. The validators were requested to modify, delete any item they deemed not applicable to the study.

They made corrections and all corrections, criticisms and suggestions were effected which helped in producing the final copy of the questionnaires.

To determine the reliability of the instruments, SHSQ and SESQ were administered once to eighty Upper Basic three school students who were not part of the study. The scores obtained were subjected to reliability computation using Cronbach's Alpha Technique. SHSQ has a reliability coefficient of .78, and reliability of SESQ was established at .81, thus the instruments were adjudged to be suitable for the study. The researchers first visited the selected schools and discussed with the principals to get permission to carry out the research. The instruments were administered on the students with the help of nine (9) research assistants who were briefed by the researchers to facilitate easy administration of the instruments. These nine research assistants were used to cover the entire local government areas that formed the sample. Three research assistant covered fifteen schools each and three weeks was used in administering the instruments.

Each instrument took the respondent's about 40 minutes for its completion; all the instruments were administered and retrieved same day by the research assistants. Also Basic Science and Technology achievement records of the participants were obtained from schools' terminal examination records. This was used as a measure of students' academic achievement.

Pearson Product Moment Correlation Coefficient as well as regression statistics was used to analyze the data generated from the study. All research questions were answered using P- value while regression statistics was used to answer the hypotheses generated in the study. All hypotheses were tested at 0.05 significant levels.

Result

Research Question 1:

What is the relationship between study habit scores of Upper Basic School Students and their Basic Science and Technology achievement scores in Akwa- Ibom State?

Table 1

Pearson Correlation Coefficient (r) of study habit scores of Upper Basic school students and their Basic Science and Technology achievement scores in Akwa-Ibom State.

Variable	Basic Science and Technology Achievement Scores (r)	Decision
Study Habits	-.081	Very Low Negative Relationship

Table 1 reveals that there is a low negative relationship between study habits and basic science and technology achievement scores of upper basic students in Akwa-Ibom, r value = -.081.

This implies that, there is a negative relationship between the two variables (study habit scores and achievement scores of Basic Science and Technology). The value -.081 indicates that the strength of relationship was very low and negligible.

Research Question 2: What is the relationship between self-efficacy scores of Upper Basic School Students and their Basic Science and Technology achievement scores in Akwa- Ibom State?

Table 2. Pearson Correlation Coefficient (r) of Self-Efficacy Scores of Upper Basic School Students and their Basic Science and Technology Achievement Scores in Akwa-Ibom State

Variable	N	Basic Science and Technology Achievement Scores (r)	Decision
self-efficacy scores	1800	-.163	Low Negative Relationship

Table 2 shows the relationship existing between self-efficacy and the basic science and technology achievement scores of upper basic school students in Akwa-Ibom State. There was a low negative relationship between self-efficacy and their Basic Science and Technology achievement scores, r = -.163.This value -.163 shows that the relationship between self-efficacy scores and Basic Science and Technology scores is poor and very low meaning that Basic science and technology students in Akwa- Ibom State have a negligible self-efficacy.

Research Question 3: What is the relationship between study habit scores, self-efficacy scores and achievement scores of Upper Basic school students in Basic Science and Technology in Akwa- Ibom State?

Table 3: Pearson Correlation Coefficient (r) of study habit scores, self-efficacy scores and achievement scores of Upper Basic school students in Basic Science and Technology in Akwa-Ibom State.

Variable	N	Achievement Scores of Upper Basic Science and Technology Students (r)	Decision
Study Habit/Self-efficacy	1800	0.171	Low Positive Relationship

Table 3 reveals that there is a low positive relationship among study habit scores, self-efficacy scores and achievement scores of Upper Basic school students in Basic Science and Technology in Akwa-Ibom State, (r) value = 0.171.

This implies that, the combine effect of the study habit and self-efficacy has a positive relationship with student's academic achievement in upper basic science and technology. The value 0.171 indicated that the strength of the relationship although low is positive.

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Research hypotheses:

Hypothesis One: There is no significant relationship between study habit and Academic achievement scores in Basic Science and Technology among Upper Basic school students in Akwa- Ibom State.

Table 4: Test of Significant Relationship between Study Habit and Academic Achievement Scores in Basic science and Technology among Upper Basic School Students in Akwa-Ibom State

Variable`	N	Academic Achievement Scores (r)	α - level	t(r)-cal	p-val	Decision
Study Habit	1800	-0.103	0.081	-3.465	0.001	Significant relationship

Table 4 shows that there is a statistical significant relationship between study habits and students' academic achievement in Basic Science and Technology among upper basic school students. The p-value = .001 is less than the 0.05level of significance. Therefore the null hypothesis that there is no significant relationship between study habit and academic achievement scores in Basic science and Technology among Upper Basic school students in Akwa-Ibom State is rejected.

Hypothesis Two: There is no significant relationship between Self-efficacy and academic achievement scores in Basic science and Technology among Upper Basic school students in Akwa Ibom State.

Table 5: Test of Significant Relationship between Self-efficacy and academic achievement scores in Basic Science and Technology among Upper Basic school students in Akwa Ibom State

Variable`	N	Academic Achievement Scores (r)	α - level	t(r)-cal	p-val	Decision
Self-efficacy	1800	-0.163	0.05	-7.018	0.001	Significant relationship

Table 5 shows that there is a statistical significant relationship between self-efficacy and students' academic achievement in Basic Science and Technology among upper basic school students. The p-value = .001 is less than the 0.05 level of significance. Therefore the null hypothesis that there is no significant relationship between self-efficacy and academic achievement scores in Basic science and Technology among Upper Basic school students in Akwa-Ibom State is rejected.

Hypothesis Three: There is no significant relationship between study habits, self-efficacy and academic achievement of Upper Basic School students in Basic Science and Technology in Akwa- Ibom State.

Table 6: Test of Significant Relationship between Study Habits, Self-Efficacy and Academic Achievement in Basic Science and Technology among Upper Basic school students in Akwa-Ibom State.

Variable	N	Academic Achievement in Basic Science and Technology (r)	α - level	F(r)-cal	p-val	Decision
Study Habits/ Self-Efficacy	1800	0.171	0.05	27.029	.001	Significant relationship

Table 6 shows that there is a statistical significant relationship among students' study habits, self-efficacy and their academic achievement in Basic Science and Technology. The p-value = 0.001 is less than the 0.05 level of significance. Therefore the null hypothesis that there is no significant relationship between students' study habits, self-efficacy and their academic achievement in Basic Science and Technology is rejected.

Discussion of Findings

The findings in this study in table 1 indicated that there is low and negative relationship between study habit and student's academic achievement in Basic Science and Technology in Upper Basic schools in Akwa- Ibom State. Before the commencement of this study, there has been reports of poor academic achievement of students in Basic Science and Technology in Upper Basic schools in the area of the study. This invariably may be attributed to students' study habit. Habits are important from educational point of view as the process of learning becomes easier and natural with the best of habits. Study habits relate with students' achievement in any school subject. Achievement is an outcome of expectancy from students that are exposed to a given subject area. Students cannot achieve maximally when their study is not given due attention, it would also be noted that the reverse will be the case when a good study habit is formed about a particular subject area. These habits formed would enable the students to acquire the necessary skills embedded in the subject matter and hence may perform maximally.

As reported by Kyauta, Shariff, and Garba (2017) in their research, study habits are the most important predictor of academic achievement. Peterson, Van, Spezio, and Reimer (2017) also opined that "good study habits are good assets to learners because they (habits) assist students to attain mastery in areas of specialization and consequent excellent performance, while bad study habit constitute constraints to learning and achievement leading to failure". The finding of this study indicated that study habit has a low negative correlation with students' academic achievement in Upper Basic Science and Technology in schools in Akwa- Ibom State. What this means therefore is that, students who develop good study habit towards basic science will perform creditably well in terms of their achievement scores in the subject. From the previous report of Akwa-Ibom State Ministry of Education it is clear that students lack or fails to develop a good study habit towards Upper Basic Science and Technology which in-turn affects them negatively resulting in poor academic achievement in the subject.

The null hypothesis was rejected indicating that there is a significant relationship between study habit and students' academic achievement in Upper Basic Science and Technology. However, the extent of statistical relationship was low and positive .The finding was in line with Uche (2020) who studied on the relationship between study habit and academic achievement of senior secondary II students in chemistry in Aguata Local Government Area of Anambra State and reported that there was a positive relationship between study habit and student's academic achievement in chemistry. Also, Ajai, Shiaki and Bulus (2020) investigation on study habits revealed a strong positive, high and significant correlation between study habits and academic performance of secondary school science students.

Self-efficacy as a correlate of Upper Basic Science academic achievement

The finding of the study in table 2 revealed a low negative relationship between students' self-efficacy and their achievement in Upper Basic Science in Secondary Schools in Akwa- Ibom State. This means that students who develop a positive self-efficacy or confidence towards a particular school subject will tend to perform creditably well in the subject. As observed by Bandura (2017) self-efficacy possess a lot of challenge to students at the cognitive level. According to Bandura, the nature of belief students hold about their abilities in relationship to a given task influences the way they perceive their prospective future academic result. Students who belief in their abilities visualize successful positive outcomes while those who do not trust their capacities are likely to suffer from cognitive negativity (a state where they become somewhat skeptic about their capacity to succeed in the face of challenging learning situations). Students with low self-efficacy, on the other hand, believe they cannot be successful and thus are less likely to make a concerted and extended efforts and may consider challenging tasks as threats that are to be avoided. Thus, students with low self-efficacy have low aspirations which may result in low academic achievement.

The hypotheses of this study which stated that there was no significant relationship between self-efficacy and students' academic achievement in Upper Basic Science proved otherwise, this indicated that there is a relationship between self-efficacy and achievement as revealed from data analysis of table 4. The finding of this study may not be unconnected with the reason why students prefer art subject to science subjects immediately they leave their Upper Basic level. More students are drawn to art subject at the senior secondary school level ignoring the Sciences indicating a shaky or a faulty foundation laid by them which may be as the result of their lack of confidence or self-efficacy in the Upper Basic science subject

This result is in agreement with Christensen et al (2012) who found that self-efficacy beliefs are positively related to and influence achievement in Basic Science. Researchers have reported that mathematics self-efficacy is a good predictor of mathematics interest and choice of mathematics related courses (Odiri, 2015).

In another study, Onyeizgbu (2011) reported that high self-efficacy seemed to influence academic persistence necessary to maintain high academic achievement. These findings have suggested that learners who posses' high self-efficacy achieves better in their academic endeavor (Serpil, 2017). If this finding is anything to go by, then students must be encouraged to developed high self-efficacy to enhance their achievement in Basic Science and Technology.

Combined independent variables (study habit and self-efficacy) as a correlate of Upper Basic Science academic achievement

Table 5 reveals a joint low positive relationship between the independent variables (Study habits and Self-Efficacy) on student's achievement in Upper Basic Science and Technology. The strength of joint relationship was low and positive meaning that the two variables have positive effect on student's achievement. This combine independent variables having a positive effect indicates that both relates with students achievement in Basic Science and Technology. The research findings further garnished strong supports to the hypothesis which revealed a statistical significant relationship between the two independent variables and students' academic achievement in Basic Science and Technology in the area of the study. This may be so because if students improve in their study habit, they are likely to have good self-confident or self-belief. Positive self-beliefs will enhance academic success. This will eventually be expressed in such students having good scores in their academic endeavor. The reverse will be the case if such students lack self-beliefs; their study habit will certainly be shaky about the school subjects in question. Automatically such student's performance will go below expectation. The study lean credence to the work of Yaman (2015) who reported that students with low self-efficacy were inclined to believe that intelligence is inherent and cannot be changed. It also indicated that students with high self-efficacy preferred mastery goals, which entailed challenges and new knowledge, as well as performance goals that comprised good grades and surpassing others.

Conclusion

The findings amplified the low relationship between study habit, self-efficacy and academic achievement confirming that the Basic Science and Technology students in Upper Basic Schools were having difficulty with their study habit and self-efficacy. Therefore, there is a serious need to improve study habit and self-efficacy of students which is found to have low positive relationship if Upper Basic Science student's academic achievement in Akwa- Ibom State is to improve.

Recommendations

Basic Science and Technology teachers, guidance counsellors and other stakeholders in education should as a matter of urgency motivate students to develop strong study habits and self-efficacy.

Competitive and collaborative method of teaching should also be used by the teachers to arouse self-belief of students in their ability. All hands should be on deck to reverse the rate of failure in the Basic Science and Technology.

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