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# SELF-EFFICACY AND STUDY HABITS AS CORRELATES OF SECONDARY SCHOOL STUDENTS' ACHIEVEMENT IN BIOLOGY IN OWERRI EDUCATION ZONE OF IMO STATE

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## ABSTRACT

*The study focused on self-efficacy and study habit as correlates of achievement of Biology students. Correlational survey design was employed. The sample of the study consist of 1006 Senior Secondary class 2 students; 388 males and 618 females drawn from 5 public secondary schools in Owerri education zone 1. Three instruments were used for data collection namely: Self-Efficacy Scale (SES), Study Habit Inventory for Biology students (SHIBS) and the Biology Terminal Results (BTR) of the students. The findings of the study show that the relationship between achievement scores of students and their self efficacy; achievement scores of students and their study habit are in a positive direction with r-values of 0.18 and 0.11. Based on the findings of the study, it was recommended that teachers should continue to give attention to the internal and external factors which may influence habits of the students. Secondary schools should go for the services of either a counselor or an evaluator or both that can help the students to work on their self- efficacy.*

**Keywords**: Self-Efficacy, Study Habits, Achievement and Biology.

## Introduction

The purpose of exposing children to science instruction right from primary school level is not necessarily to turn them into scientist per se but to enable them acquire the right scientific attitudes and to enable them raise question about things that intrigue them. The need for science as an indispensable tool for a nations' overall sustainable development can hardly be over-emphasized. All branches of sciences have important contributions to make. Biology is one of the major branches of sciences. A poor biology foundation at the senior secondary school will jeopardize any future effort to enhance achievement in the subject. Biology being a science of life occupies such an important position in the secondary school curriculum. It is designed ultimately to educate individual who may or may not pursue biology related career, but at least acquire the knowledge of how and the basic essentials for the proper functioning of the body system (Ige & Oluwasina, 2019). The presence of some factors

hinders the students' achievement in Biology. One of factors is self- efficacy.

According to Dell (2000), self-efficacy is a person's judgment about being able to perform a particular activity. It is a student's "I can" or "I cannot" belief. Students with low self- efficacy do not expect to do well, and they often do not achieve at a level that is commensurate with their abilities. They do not believe they have the skills to do well so they do not try. To develop high educational achievement among students, it is essential to build stronger self-efficacy as early as possible. Even, Farmer et al (2021) still sees self-efficacy as, peoples' beliefs about their abilities in particular domain thought to be important in motivating them to do what they can do/ achieve. From these definitions one can deduce that self-efficacy is an individual's overall decision about his/her capability to accomplish a specific task/activity.

In the past years, researchers like Eastman & Marziller, Kazdin, Teasdale in Pajares, 2004 have argued that in many cases of self- efficacy, judgments are themselves dependent on outcome expectations and that Bandura (1977) oversimplified the relationship between the two constructs; self-efficacy beliefs and outcome expectations. These researchers argued that individuals can infer their efficacy beliefs from such imagined outcomes, and they suggested that individuals' perceptions of an outcome and their value of the task necessary to achieve that outcome can regulate their behaviour as powerfully as their self- efficacy beliefs, and even independent of them. Bandura in Pajares (2004) countered that "one cannot conjure up outcomes without giving thought to what one is doing and how well one is doing it" thus, lack of confidence to exercise control over a particular situation creates envisioned outcomes. Bandura argued that it is also possible to exclude considerations of outcomes from judgments of personal efficacy (Pajares, 2004). Pajares further stated that these four sources determine self- efficacy: enactive mastery experience, vicarious experience, verbal persuasion and physiological and emotional states. In all, self efficacy refers to the confidence people have in their abilities that they will be successful at a given task.

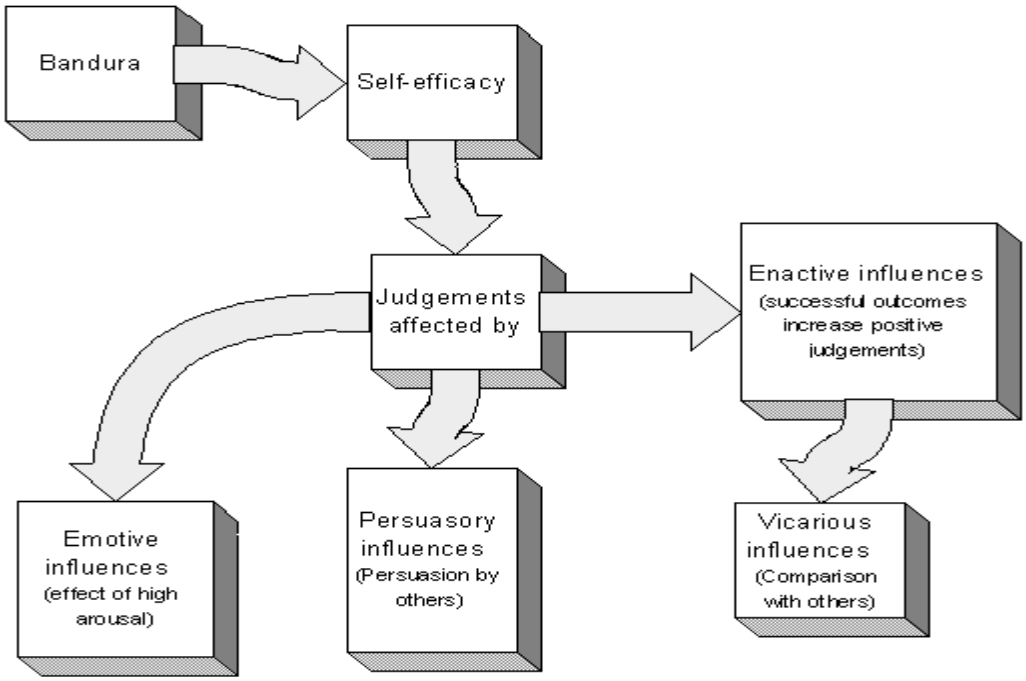
Also playing an important role in students' achievement is study habit. Study habits are a well-planned and deliberate pattern of study which has attained a form of consistency on the part of the students towards understanding academic subjects and passing in examination (Enekwechi & Ezeanya, 2021). It is study habits which help the learner in obtaining meaningful and desirable knowledge. Good study habits act as a strong weapon for the students to excel in life. Study habit could be active or inactive. Uwazurike (2008) indicated that active study habit entails students' involvement and concentration in the lesson thereby leading to effective study. On the contrary, inactive study habits entail lack of concentration, feeling

bored, tired or sleepy while studying, absence of time budgeting, ineffective note-taking, inadequate consultations and other similar negative tendencies towards studies (Ibe, 2012). From the Researcher's view point, study habits can be said to be organized and systematic efforts, techniques, put by the individuals to ensure intellectual functioning and passing of examination. The prevalent ugly trends in the academic outputs and dispositions of students towards biology, therefore, point to the fact that this salient factor (study habit) may not have been sufficiently addressed.

Iheonu in Ibe (2012) indicated that in order to maximize students' academic achievement, approaches to study and study habits of the students are as important as classroom environment. The inability of a school system to develop useful study habits in its learners leads to wastage and stagnation. To the researchers; Academic achievement can be said to be the degree of competence indicating accomplished specific goals of students measured through assessments like standardized tests.

The theoretical framework of this study consists of; Self-efficacy theory propounded by Albert Bandua in 1977. This theory is based on one's belief of their capabilities. Inorder to succeed, people need a sense of self-efficacy, strung together with resilience to meet the inevitable obstacles and inequalities of life (Bandura, 1977).

Figure 1 shows the Bandura's Theory of Self-Efficacy




(Bandura, 1977)

This study is also based on Martin Ford's Motivational Systems Theory (MST) stated by Martin, E. Ford in the year 1992. This framework focuses on the individual as the unit of analysis, but embeds the individual in the biological, social, and environmental contexts that are crucial to development.

**Problem of the Study**

Some students are eager to learn and willing to tackle new challenges while others seem uninterested or unmotivated. Some students demonstrate high level of confidence in their abilities while others seem unsure of themselves. Thus, there is a problem of employing strategies that will increase students' confidence to learn new concepts. Also, Psychologists have established that many students perform poorly in their academic work even though the students possess the mental ability to perform well due to poor study habits (Bakare in Ibe, 2012). There has been inconsistency in contemporary understanding on the relationship between self- efficacy and achievement (Ige & Oluwasina, 2019; Haya et.al.2020; Nwosu and Okoye, 2014). Also, there have been disparity in contemporary understanding on the relationship between study habit and achievement of students (Enekwechi & Ezeanya, 2021; Ibe, 2012). Yes, most of

the existing studies stated that there was a strong correlation between the two variables, there were still studies arguing the opposite (Nwosu and Okoye, 2014). Thus, there was need to demonstrate a clearer understanding between the variables, so as to unravel the mystery behind the continued poor academic achievement of students in Biology in Imo state (Ibe, 2012; Uwazuruike, 2008).

The purpose of the study is to determine the relationship between self-efficacy, study habits and students' achievement in Biology. Specifically, the study:

1. determined the relationship between self- efficacy scores of biology students and their achievement scores.
2. determined the relationship between study habits scores of biology students and their achievement scores.

This study will be beneficial to all especially teachers, students, curriculum planners, education researchers and ministry of education.

## Research Questions

The following research questions guided the study:

1. What is the relationship between self-efficacy scores of biology students and their achievement scores?
2. What is the relationship between study habits scores of biology students and their achievement scores?

## Hypotheses

To achieve the purpose of this study, the following hypotheses guided the study at **0.05** level of significance:

1. There is no significant relationship between self- efficacy scores of biology students and their achievement scores.

2. There is no significant relationship between study habits scores of biology students and their achievement scores.

## Research Method

Data needed for this study was generated using correlational survey design. The population of the study is 10182 SS2 students, 70 public secondary schools. The sample of the study consist of 1016 Senior Secondary class 2 students drawn from 5 public secondary schools in Owerri education zone 1. Sample was selected by purposive sampling technique based on availability of students. Three instruments were used for data collection namely: Self-Efficacy Scale (SES)- a 30-item scale adopted from Sherer et. al (1982), Study Habit Inventory for Biology students (SHIBS)- is a 15-item inventory adapted from Ibe (2012) and the Biology Terminal Results (BTR) of the students in their schools approved by the school management board. For Study Habits Inventory for Biology Students (SHIBS), Face Validation was carried out by five experts comprising of one from Guidance and Counseling (G & C) Department Nnamdi Azikiwe University

Awka (UNIZIK), an experienced secondary school biology teacher from Imo state, two experts from Measurement and Evaluation from UNIZIK and Imo state university Owerri (IMSU) and one expert from Science Education Department IMSU. The comments and suggestions of these experts were incorporated into the final draft of the instrument. For Self- efficacy scale (SES); Sherer et al. (1982) reported Cronbach alpha internal consistency reliability coefficient of 0.86. The reliability coefficient seems to have been long obtained, thus the researcher administered the instrument to 30 SS 2 biology students of another school outside the population using Cronbach Alpha method, a value of 0.828 indicating the reliability of the instrument was obtained. The instrument SHIBS was administered to the same thirty (30) students used for SES. The internal consistency of this instrument (SHIBS) was established using the data obtained. The test of internal consistency using Cronbach Alpha method yielded a value of 0.683 indicating the reliability of the instrument. The choice of Cronbach Alpha method was based on the fact that the responses to the items in SHIBS were not dichotomously scored. In other words, the responses did not entail pass or fail (yes or no) answer but level of agreement or disagreement with each statement of the given item in the instrument. Biology Terminal Results (BTR) is a standardized instrument hence, did not undergo the test of reliability. Data for the study were collected during the second term of the secondary school academic session. Each of the schools commenced normal class teachings during the first term. After the first term biology examination, the Biology Terminal Results (BTR) was obtained from the biology teachers. The researcher with the assistance of the biology teachers administered the two instruments: SES and SHIBS in each of the schools. Data generated with these instruments was analyzed using frequency, mean, standard deviation, percentage, and Pearson product moment correlation for measuring relationship. The hypothesis was tested with t-test statistics at 0.05 level of significance.

**Presentation of Results**

**Research question 1**: what is the relationship between self- efficacy scores of biology students and their achievement scores?

**Table 1: Relationship between self- efficacy scores of biology students and their achievement scores**

| | | N | Corre (r) | Sig. |
|---|---|---|---|---|
| Pair 1 | ACHSCORES & SES | 1006 | .181 | .000 |

Data presented on table 1 shows a coefficient of relationship between

achievement scores of students and their self efficacy. The relationship is in a positive direction with an r-value of 0.18.

**Research question 2:** what is the relationship between study habits scores of biology students and their achievement scores?

**Table 2: Relationship between study habit scores of biology students and their achievement scores**

| | N | Corre (r) | Sig. |
|---|---|---|---|
| Pair 1 ACHSCORES & SHIBS | 1006 | .119 | .000 |

Data presented on table 2 shows a coefficient of relationship between achievement scores of students and their study habit. The relationship is in a positive direction with an r-value of 0.11.

$HO_{1:}$ There is no significant relationship between self- efficacy scores of biology students and their achievement scores.

**Table 3: t-test of no significant relationship between self- efficacy scores of biology students and their achievement scores**

| Variables | N | $\overline{X}$ | SD | rcal | Zr | Zcrit | t-cal | DEC. |
|---|---|---|---|---|---|---|---|---|
| Self- efficacy sc | 43.7167 | 1006 | 18.08312 | .181 | 13.06 | 1.96 | 37.46 | Sig |
| Achievement sc | 65.7018 | 1006 | 8.77777 | | | | | |

Data presented on table 3 shows that when the r-value of 0.18 was subjected to t-test of significance, the Zr value of 13.06 was found to be significant. This implies that there is a significant relationship between self-efficacy scores of biology students and their achievement scores. Even t-value which is also a measure of association shows a significant relationship between the two variables because the t-value of 37.46 was significant at 0.05 level.

$HO_{11:}$ There is no significant relationship between study habits scores of biology students and their achievement scores.

**Table 4: t-test of no significant relationship between Study habit scores of biology students and their achievement scores**

| Variables | N | $\overline{X}$ | SD | rcal | Zr | Zcrit | t-cal | DEC. |
|---|---|---|---|---|---|---|---|---|
| Study habit sc | 1006 | 45.09 | 5.93 | .119 | 8.01 | 1.96 | 2.38 | Sig |
| Achievement sc | 1006 | 43.73 | 18.08 | | | | | |

Data presented on table 4 shows that when the r-value of 0.11 was subjected to t-test of significance, the Zr value of 8.01 was found to be significant. This implies that there is a significant relationship between study habit scores of biology students and their achievement scores. Even t-value which is also a measure of association shows a significant relationship between the two variables because the t-value of 2.38 was significant at 0.05 level.

## Discussion

The findings of this study revealed that a significant relationship exists between self- efficacy of students and their achievement. This finding is in agreement with the findings of Hayal et.al (2020) unlike, Nwosu and Okoye (2014) that reported that self- efficacy did not predict students' academic achievement (the relationship was not significant). Self- efficacy promotes academic achievement directly or indirectly by increasing academic aspirations and prosocial behaviours (Hayal et. al. 2020). Students with low self- efficacy do not expect to do well and they often do not achieve at a level that is commensurate with their abilities. They do not believe they have the skills to do so well so they do not try (Dell, 2000).

The findings of the study also showed that a significant relationship exists between study habits of students and their achievement. The significance of the result is in agreement with findings of Ibe (2012). In opposition, Enekwechi and Ezeanya (2021) reported that the contribution of study habits as a predictor of a chemistry student's academic achievement in group theory was not significant. Study habits involve a series of activities and dispositions which a learner must acquire to enable him/her engage in academic studies. According to Ibe (2012) study habits are a well planned and deliberate pattern of study which has attained a form of consistency on the part of the students towards understanding academic subjects and passing in examination.

## Conclusion

Today, Teaching and learning process focuses more on learning of skills than of content, hence there is greater demand for reinforcement of such intrinsic learner factors as study habits and self-efficacy than ever before. Self- efficacy is an imperative/ vital part of preparation and achievement such that teachers and students have their individual role to play. Self-efficacy should be supported with effort so as to accomplish the specific goal. Study habits require the student to use his/her uninterrupted attention to acquire knowledge through planned routines. It is expected that one day biology students will complement their self- efficacy and study habits with effort so as to achieve more.

## Recommendations

1. Secondary schools should be designed in a way that emphasis would be on giving students the opportunity to

participate in school activities and decision making.

2. Teachers should continue to give attention to the internal and external factors which may influence habits of the students.
3. Teacher training programmes should update their courses so that science teachers are able to impart the skill of studying in the students.
4. Secondary schools should go for the services of either a counselor or an evaluator or both that can help the students to work on their self-efficacy.

## References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84,* 191-215.

Benwari, N. N. & Nemine, E. B. (2014). Intensive reading as a study habit and students' academic achievement in economics in selected secondary schools in Bayelsa state, *Nigeria. Journal of curriculum and teaching. 3* (2). Retrieved from: http://dx.doi.org/10.5430/jct.v3n2p34

Dayal, J.K. (2013). An empirical study on study habits of science and humanities stream graduates. *Indian journal of research. 2*(8) 72-73. India: paripax. Retrieved from: http://theglobaljournals.com/paripex/file.php?val=August_2013_1376661832_f9d4f_25.pdf

Dell, S. (2000). *An introduction to self-efficacy*. Retrieved from; www.gifted.uconn.edu/.../SelfEfficacy/section1

Enekwechi, E.E. & Ezeanya, M. C. (2021). *Study habit as a predictor of secondary school students` achievement in chemistry in Anambra state*. International journal of education and evaluation. E-ISSN 2489-0073 P-ISSN 2695-1940. 7(2). https://www.iiardjournals.org/get/IJEE/VOL.%207%20NO.%202%202021/Study-Habit%20as%20a%20Predictor.pdf

Farmer, H., Xu, H., Dupre, M.E. (2021). *Self-Efficacy*. In: Gu, D., Dupre, M.E. (eds) Encyclopedia of Gerontology and Population Aging. Springer, Cham. https://doi.org/10.1007/978-3-030-22009-9_1092

Hayat, A.A., Shateri, K., Amini, M. *et al.* (2020). *Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students*: a structural equation model. *BMC Med Educ* **20**, 76 (2020).

https://doi.org/10.1186/s12909-020-01995-9

Ibe, H. N. (2012). *Effects of teaching methods (expository method-A and guided-inquiry-B) and study habits (active and inactive) on senior secondary school students' performances in biology.* Unpublished Ph.D dissertation Imo state university Owerri.

Ige, T & Oluwasina, Bukola. (2019). *Prior Knowledge as Correlate of Students Learning Outcome in Biology*. 4. https://www.researchgate.net/publication/351776437_Prior_Knowledge_as_Correlate_of_Students_Learning_Outcome_in_Biology

Nwosu, K. C. & Okoye, R. O. (2014). Students' self- efficacy and self-rating scores as predictors of their academic achievement. *Journal of educational and social research. 4* (3) . doi: 10.5901/jesr.2014.v4n3p223

Pajares, F. (2004). *Current directions in self-efficacy* in M. Maehr & P.R. Pintrich (Eds). Advances in motivation and achievement. 10, 1-49. Greenwich, CT: JAI press. Retrieved from: http://www.uky.edu/~eushe2/Pajares/effchapter.html

Sherer, M., Maddox, J. E., Mercandante. B., Prentice_ Dunn. S., Jacobs. B. & Rogers, R. W. (1982). The self-efficacy scale: construction and validation. *Psychological reports*, 51, 663- 671.

Uwazuruike, N. R. (2008). *Psycho-social factor associated with academic underachievement in junior secondary school students.* Unpublished Ph.D dissertation, university of Port- Harcourt.