Influence of Self-Efficacy on Academic Achievement of Undergraduate Students of Abubakar Tafawa Balewa University Bauchi

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Abstract

This study examines the influence of self-efficacy on academic achievement of undergraduate students of ATBU Bauchi. A survey design was adopted. One thousand two hundred (1200) undergraduate students of ATBU Bauchi participated in the study and were selected randomly from the six faculties and medical college of the university. A self-efficacy questionnaire adopted from previous studies relevant to the current research was used as an instrument for data collection while academic achievement of undergraduate students of ATBU Bauchi was measured using students' CGPA. The study revealed that there is a positive and significant relationship between self-efficacy and academic achievement of undergraduate students of ATBU Bauchi. The study further suggests that undergraduate students with high degree of self-efficacy are more likely to put more effort and perform better in their academic program. It is, therefore, recommended that, the school management, lecturers, and government, in general, should create an enabling environment for learning that will make undergraduate students of ATBU to develop academic self-efficacy. This might help in addressing the poor academic achievement of students in the university which results to students withdrawal from the university.

Keywords: *self-efficacy, academic achievement, undergraduate students, ATBU Bauchi*

Introduction

The education system in Nigeria is the collective responsibility of the federal, state, and local governments. The Federal Ministry of Education plays major roles in regulating the education system, such as the establishment of education policy and ensuring quality control. However, the federal government is more concerned with tertiary education. The state governments, on the other hand, maintain the secondary education while the local governments control the primary education. Hence, education sector in Nigeria is divided into three (3) subsectors, namely: basic education, senior secondary school education, and tertiary education. The tertiary education comprises of University and non-University education (Federal Republic of Nigeria, 2013). University admission in Nigeria is done based on certain criteria. That is, the first year entry requirements into most universities in Nigeria include: Minimum of five credits passes in relevant subjects in the Senior School Certificate Examination (SSCE) at maximum of two sittings; Minimum cut-off marks in Joint Admission and Matriculation Board Entrance Examination (JAMB) of usually 180 and above out of a maximum of 400 marks are required. Many universities in addition to the UTME/JAMB scores and SSCE criteria still demand prospective students to pass the post-UTME organized by the host institution before candidates are qualify for admission. These rigorous selection procedures are aimed at selecting students who can meet-up with the academic demands of their chosen universities. However, many students who seem to have met the admission requirement are not able to demonstrate the knowledge and skill required by the universities up to the point of graduation. Specifically, the learning outcome of many students who met the admission criteria set out by the university is persistently discouraging over the years. As a result of this poor academic achievement, many students are withdrawn from a program or the university.

The major factor contributing to this poor academic achievement in Nigeria universities has not been completely established yet (Baba, Aburiya & Azeesi, 2018). Although, studies (see, for example, Chowdhury, & Shahabuddin, 2011) and experience has shown that the poor performances can be attributed to two major factors: internal or external variables. Internal

variables are mostly student-related factors. While the External factors are home-related, school-related and teacher-related factors. Studies such as Ekundayo (2012); Alshammary, Saguban, Pasay, Altheban, and Shammari (2018) argued that student's self-efficacy is a very important factor that contributes to students' academic performance. Although, several studies have been conducted in some institution, but most of the studies focused on school (see, for example, Adeogun & Olisaemeka, 2011; Mohd, Mahmood & Ismail, 2011) and teacher (see, for example, Akbari & Allvar, 2010; Mojavezi & Tamiz, 2012) related factors, no study has focused solely on self-efficacy and academic achievement of students in ATBU Bauchi. Hence the need to investigate the influence of self-efficacy on academic achievement of undergraduate students of ATBU Bauchi.

The study's outcome will be relevant to the undergraduate students of ATBU Bauchi in terms of identifying their self-efficacy and its role in determining their academic achievement. It is also hoped that the persistent poor academic achievement among undergraduate students of ATBU Bauchi which as a result many students are withdrawn from the program or the university can be minimize when students identifying that their self-efficacy has impact on their academic achievement.

Literature Review
Scholars viewed Self-efficacy in different ways, for instance, Bandura (2001) define Self-efficacy as the confidence people have in their ability for success in a given task. Perceived self-efficacy influences activities and processes that have effects on our lives. Specifically, self-efficacy beliefs may determine our feelings, thoughts, motivation and behavior. Pintrich and Schunk (1996) asserts that self-efficacy beliefs provide the foundation for human motivation, well-being and personal accomplishment. Unless people believe that their actions can produce the desired outcomes, they have little incentive to act or persevere in the face of difficulties. As a result, students who possess a high degree of self-efficacy are more likely to attempt challenging tasks, persist longer at them, and apply more effort in the process.
As well, academic self-efficacy is defined as the ability of students to complete assignments,

regulating learning activities, and meet the achievement expectations and goals (Zare & Mobarakeh, 2011). Academic self-efficacy is the heart in the model of achievement and school success. This concept is in line with the three essential components of a school's success which are efficacy, confidence and academic emphasis (Wu & Hoy, 2013). The concept of self-efficacy is also considered to be one of the factors that make a huge impact on the teaching and learning process (Ates, 2011). Therefore, self-efficacy has become an important factor that will affect students' choices of their learning task and behaviors, as well as their mentality and emotions on learning (Sugahara, Suzuki, & Boland, 2010).

The relationship between self-efficacy and academic achievement has always been a topic of interest in social sciences, particularly in the fields of education. A number of studies have established the relationships between self-efficacy and academic achievement. However, most of the existing literature focused on studying the relationship between self-efficacy and academic achievement of students in a particular course. In particular, no study has focused solely on influence of self-efficacy on academic achievement of students in ATBU Bauchi. Therefore, it is hoped that the present research can provide further insights on the phenomenon.

For example, in a study by Li (2012), the relationship between social science students' attitude towards research methods and statistics, self-efficacy, effort, and academic performances was examined. Li (2012) adopted self-administered questionnaire and a total of 153 students from Department of Applied Social Studies formed the representative sample. The study was conducted in the City University of Hong Kong. The study employed a multiple regression analysis, and established that there is a positive correlation between all the four variables. The study also showed that self-efficacy could significantly predict students' effort. Even though the findings by Li (2012) are consistent with those of Dogan (2015); Yang and Wang (2015), but the study was focused mainly on academic performances of students in research methods and statistics. Since the study only provided relationship between self-efficacy and academic performances of students in research methods and statistics, it did not test the self-efficacy and

overall performances of students. As a result, the current study looked into the overall academic achievement of students in ATBU Bauchi.

In a different study, Motlagh, Amrai, Yazdani, altaib Abderahim, and Souri (2011) investigated the relation between self-efficacy and academic performance amongst high school students. The study used a total of 250 students. The 250 participants forming representative sample were selected based on multi-stage cluster sampling. The study employed the use of completed self-efficacy in addition to measuring achievement score grade point average in classes. The study then analyzed the data based on correlation coefficient and regression analysis. Motlagh et al. (2011) confirmed the findings of Feldman and Kubota (2015) stating that self-evaluation, self-directing, and self-regulation, which are some of the components of self-efficacy, are correlated with academic performances. Findings showed that self-efficacy amongst high school students can be a good basis for enhancing academic performances. Even though, Motlagh et al. (2011) study was conducted on self-efficacy and academic performance which was the interest of the current study but their study conducted with students of high school and present study conducted with undergraduate students of ATBU Bauchi.

In a meta-analysis conducted by Honicke and Broadbent (2016), the study investigated the influence of self-efficacy on academic performance through a systematic review by integrating research studies done in the last 12 years. The study established that a number of studies had established a positive correlation between the two main variables of self-efficacy and academic performances. In addition, Honicke and Broadbent (2016) established that out of the eligible 59 papers, majority of the papers confirmed that academic self-efficacy moderately correlated with academic performances. What's more, many of the reviewed articles had identified several other mediating and moderating variables. Some of the mediating and moderating variables identified included effort regulation, deeper processing strategies, and goal orientations. Having reviewed a number of articles, Honicke and Broadbent (2016) established that owing to paucity and longitudinal nature of reviewed

studies, it would be essential for deeper study on the relationships amongst the various variables under investigation, which the current study took up and investigated influence of self-efficacy on academic achievement of undergraduate students of ATBU Bauchi.

Shkullaku (2013) in another study explored gender differences in self-efficacy and academic performances within the Albanian students while focusing on two major universities in Tirana, Albania. Other than just establishing how self-efficacy and academic performances correlate, Shkullaku (2013) went further ahead to look at the two correlations considering gender aspects. A total of 180 students, 102 females and 78 males, were used for data collection. A questionnaire was used to measure self-efficacy on one hand and on the other hand the GPA of the first semester was used by researchers as proxy for academic performances. Using descriptive and inferential statistics via Pearson Correlation and t-test statistics, Shkullaku (2013) established that there was a significant difference between males and females in self-efficacy. The reviewed study by Shkullaku (2013) focused on gender differences in self-efficacy and academic performances. Their study was conducted in Albania, while the current study focused on influence self-efficacy on academic achievement of undergraduate students and was conducted in Nigeria.

In contrast, Zuffianò, Alessandri, Gerbino, Kanacri, Di Giunta, Milioni, and Caprara (2013) in their study examined the contribution of self-efficacy beliefs in self-regulated learning and use the same to predict academic performances of students in junior secondary school. In addition, Zuffiano et al. (2013) aimed at establishing effects of previous academic performances, gender, socioeconomic status, intelligence, personality traits, and self-esteem of the students on their current academic performances or achievements. The study involved a total of 170 students that comprised of 87 being females and the remaining male, with mean age being 13.47 years. All participants were from a junior high school in Rome, Italy. On the basis of hierarchical regression analysis, the study established that there is unique contribution of self-regulated learning on academic performances and self-efficacy also has significant impact on self-regulated learning. However, Zuffiano et al.

(2013) study was conducted with students of junior secondary school while current study used undergraduate and it was conducted in Nigeria. Again, Zuffiano et al. (2013) was conducted in Italy.

In Singapore, Loo and Choy (2013) examined the correlation of the four hypothesized sources of self-efficacy (mastery experience, vicarious experience, social persuasion, emotional arousal) with academic performance. A 40-item survey measuring sources of mathematics self-efficacy was administered to 178 third-year engineering students. Academic performance, which includes mathematics module grades and cumulative grade point average (GPA) scores, were collated. The results of the study showed that self-efficacy sources were correlated with mathematics achievement scores as well as cumulative GPA of electronics-related engineering diplomas. The reviewed study focused on the engineering students in diploma programme but not degree programme students unlike the current study. A sample of 178 is considered small as compared to the current study, which used a total of 1200 university students to form a representative sample. In addition, unlike the reviewed study that only tested the relationships through correlational analysis, the current study tested the relationships through regression analysis.

In another study, Chowdhury and Shahabuddin (2011) examined how self-efficacy, motivation and academic performance interact among students enrolled in an introductory marketing course in a private university of Bangladesh. Data were collected through self-administered questionnaire from the students. Empirical results revealed that there are statistically positive correlations between self-efficacy and performance, that is, students with high self-efficacy skills performed better than those with low self-efficacy. The reviewed study was done in a private university of Bangladesh but not on public university as it was the case in the current study. In addition, the study was conducted in Bangladesh unlike in the current study which was conducted in ATBU Bauchi Nigeria.

Research Framework
A framework of this study that indicates the relationship between self-efficacy and academic achievement of students in ATBU Bauchi is developed based on the underpinning theory and empirical studies discussed in the preceding section (see Fig. 1). It is developed based on the social-cognitive theory. The theory was originally developed by Bandura (1986). Bandura emphasized in social cognitive theory, the construct of self-efficacy and its impact on learning, as this belief in one's own ability influences choice of activities and effort (Schunk & Zimmerman, 2006). Therefore, students' belief and confidence in their academic ability may influence their academic achievement.
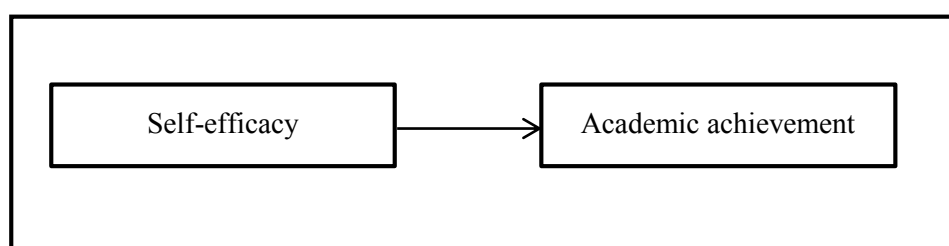

Fig. 1 Research Framework

The following hypothesis is formulated:
H1: There is a significant positive relationship between self-efficacy and academic achievement of students in ATBU Bauchi.

Research Methodology
The study's target population consist of all undergraduate students of ATBU Bauchi. A sample of one thousand two hundred (1200) undergraduate students was selected from seven (7) faculties including the college of medicine. A Simple random sampling technique was used in the present study, because this sampling technique is believed to produce samples which are free from bias (Sambo, 2005). Following this argument, the present study randomly selected equal number of students from each faculty of the university to form the sample size.

A study, a survey research design was adopted in this study to examine the relationship

between self-efficacy and academic achievement of undergraduate students of ATBU Bauchi. A survey method is used when a researcher is interested in studying the opinions, feelings, and thoughts of the respondents about a particular situation (Fisher, 2010). This method enables the researchers to collect and analyze quantitative data as well as suggesting the reasons for the relationship between the variables of interest (Saunders Saunders, Lewis, & Thornhill, 2009). Hence, a survey method is appropriate in achieving the objective of this study.

The instrument used for data on undergraduate students' academic achievement was students' CGPA whereby students were asked to mention their CGPA on the survey instrument. The self-efficacy of undergraduate students on the other hand, was measured using self-efficacy questionnaire adopted from previous studies relevant to the current research. The reliability of the instrument was determined using Cronbach Alpha. Hair, Hult, Ringle, and Sarstedt (2013) recommended that the value of Cronbach Alpha .70 and above is acceptable and sufficient. In the present study, reliability coefficient is .86, suggesting that the instrument is reliable.

In this study the researchers administered a questionnaire and collect data regarding self-efficacy of undergraduate students of ATBU Bauchi, and the students were asked to indicate on the survey instrument their CGPA which served as measurement of their academic achievement.

For cleaning of data and analysis, SPSS 23 was used throughout the process. The predictive power of self-efficacy (independent variable) on academic achievement of undergraduate students of ATBU Bauchi (dependent variable) was determined using simple linear regression. A simple linear regression is use in predicting the score on one variable from another variable score (Tabachnick & Fidell, 2007). Hence, simple linear regression is appropriated in testing the hypothesis of the current study.

Findings
Having satisfied the necessary assumptions of regression analysis, the simple linear regression was performed to test the hypothesis of the study. The statistical evidence has proved that the model was statistically significant based on the F ratio 54.442, p = .000. The result also revealed the R^2 value of .440, indicating that the model fit is large (Murphy Murphy, Myors, & Wolach, 2014). Furthermore, the statistical evidence documented in table 1, shows that the relationship between self-efficacy and academic achievement of undergraduate students of ATBU Bauchi had a beta value of .209, p = .000. This suggested that the influence of self-efficacy on academic achievement of undergraduate students of ATBU was positive and significant. Hypothesis 1 is, therefore, supported.

Table 1:   Regression Analysis on influence of self-efficacy on academic achievement of undergraduate students of ATBU.

Variable	Standardized Coefficients Beta	T value	P value	Decision
Self-efficacy	.209	7.379	.000	Supported

Discussion
The finding of this study suggests that self-efficacy of undergraduate students of ATBU has significantly and positively predict their academic achievement. This implies that the undergraduate students with high degree of self-efficacy are more likely to apply more effort and perform better academically. The findings of this study agree with that of Arslan (2012) who revealed that academic achievement and self-efficacy reciprocally effect each other. This supports the earlier report of Li (2012); Honicke and Broadbent

(2016); Chowdhury and Shahabuddin (2011) who confirmed a significant relationship between the self-efficacy beliefs and academic performance. Furthermore, the findings are in agreement with the study by Loo and Choy (2013) whose results of the study showed that self-efficacy sources were correlated with mathematics achievement scores as well as cumulative GPA. In contrast, Shkullaku (2013) established that there was a significant difference between males and females in self-efficacy.

Conclusion

This study examines the influence of self-efficacy on academic achievement of undergraduate students of ATBU Bauchi. 1200 undergraduate students of ATBU Bauchi participated in the study. The study has established a positive and significant relationship between self-efficacy and academic achievement of undergraduate students of ATBU Bauchi. The study indicates that undergraduate students with high degree of self-efficacy are more likely to apply more effort and perform better in their academic achievement. Therefore, the learning outcome of undergraduate students of ATBU Bauchi that persistently remained discouraging over the years which as a result of this poor academic achievement, many students are withdrawn from a program or the university can be addressed drastically by encouraging the undergraduate students of ATBU Bauchi to develop academic self-efficacy. It is, therefore, recommended that, the school management, lecturers, and government, in general, should create a comfortable environment for learning that will make undergraduate students of ATBU to develop academic self-efficacy and this might help in addressing the poor academic achievement which as a result many students are withdrawn from the university.

Reference

Adeogun, A. A. & Olisaemeka, B. U. (2011). Influence of School Climate on Students' Achievement and Teachers' Productivity for Sustainable Development. *Online Submission*, *8*(4), 552-557.

Akbari, R. & Allvar, N. K. (2010). L2 Teacher Characteristics as Predictors of Students' Academic Achievement. *Tesl-Ej*, *13*(4), n4.

Alshammari F, Saguban R, Pasay-an E, Altheban A. & Shammari L. (2018). Factors affecting the academic performance of student nurses: A cross-sectional study. *Journal of nursing education and practice*.

Ates, A. (2011). Self-efficacy beliefs, achievement motivation and gender as related to educational software development. *Turkish Online Journal of Distance Education (TOJDE)*, 12 (3), 21-32.

Baba, B. A., Aburiya, A. D. & Azeesi, A. (2018). Motivation and shorthand performance. *New media and mass communication*

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Britner, S. L. (2012). *Science Self-Efficacy of African American Middle School Students: Relationship to Motivation Self-Beliefs, Achievement, Gender, and Gender Orientation.* Unpublished master's thesis, Georgia State University.

Chowdhury, S. M. & Shahabuddin, A. M. (2011). Self-efficacy, motivation and their relationship to academic performance of Bangladesh College Students. *Theory and Practice in Language Studies, 1(*10), pp. 1284-1294.

Dogan, U. (2015). Student engagement, academic self-efficacy, and academic motivation as predictors of academic performance. *Anthropologist*, *20*(3), 553-561.

Ekundayo, H. T. (2012). School facilities as correlates of students' achievement in the affective and psychomotor domains of learning. *European scientific journal*, *8*(6), 208-215.

Federal Republic of Nigeria. (2013). *National policy on education*, Lagos: NERDC Press.

Feldman, D. B. & Kubota, M. (2015). Hope, self-efficacy, optimism, and academic performance: Distinguishing constructs and levels of specificity in predicting college grade-point average. *Learning and Individual Differences*, *37*, 210-216.

Fisher, C. (2010). Researching and writing a dissertation: A guidebook for business students (3rd ed.). England: Pearson Education Limited.

Hair, J. F., Hult, G. T. M., Ringle, C. & Sarstedt, M. (2013). *A primer on partial least squares structural*

equation modeling (PLS-SEM). Thousand Oaks, CA: Sage Publications, Incorporated.

Honicke, T. & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review*, *17*, 63-84.

Li, L. K. (2012). A Study of the Attitude, Self-efficacy, Effort and Academic performance of City U Students towards Research Methods and Statistics. *Discovery–SS Student E-Journal*, *1*(54), 154-183.

Loo, C.W. & Choy, J. L. F. (2013). Sources of Self-Efficacy Influencing Academic Performance of Engineering Students. *American Journal of Educational Research* 1:3, 86-92.

Mohd, N., Mahmood, T. F. P. T. & Ismail, M. N. (2011). Factors that influence students in mathematics achievement. *International Journal of Academic Research*, *3*(3), 49-54.

Mojavezi, A. & Tamiz, M. P. (2012). The Impact of Teacher Self-efficacy on the Students' Motivation and Achievement. *Theory & Practice in Language Studies*, *2*(3).

Motari, J. M., Ogoma, S. O. & Misigo, B. L. (2014). Gender differences in self-efficacy and academic performance in mathematics and science subjects among secondary school students in Lugari district, Kenya. *Educational Psychology, 4*(3), 67-69.

Motlagh, S. E., Amrai, K., Yazdani, M. J., altaib Abderahim, H. & Souri, H. (2011). The relationship between self-efficacy and academic performance in high school students. *Procedia-Social and Behavioral Sciences*, *15*, 765-768.

Murphy, K. R., Myors, B. & Wolach, A. (2014). Statistical power analysis: A simple and general model for traditional and modern hypothesis tests. New York: Routledge.

Ogunmakin, A. O. & Akomolafe, M. J. (2013). Academic Self-Efficacy, Locus of Control and Academic Performance of Secondary School Students in Ondo State, Nigeria. *Mediterranean Journal of Social Sciences 4(*11), 87 – 101.

Pintrich, P. R. & Garcia, T. (1993). Individual differences in students' motivation and self- regulated learning. *German Journal of Educational Psychology*, 7(2–3), 99–107.

Sambo, A. A. (2005). *Research methods in education*. Ibadan: Evans Brothers Nigeria Ltd.

Saunders, M., Lewis, P. & Thornhill, A. (2009). Research methods for business students (5th ed.). India: Pearson Education.

Schunk, D. H. & Zimmerman B. J. (2006). Competence and control beliefs: Distinguishing the means and ends, in Handbook of educational psychology, 2nd ed., P. A. Alexander and P. H. Winne, Eds. Mahwah, NJ, Lawrence Erlbaum Associates.

Shkullaku, R. (2013). The relationship between self-efficacy and academic performance in the context of gender among Albanian students. *European Academic Research*, *1*(4), 467-478.

Sugahara, S., Suzuki, K. & Boland, G. (2010). Students' major choice in accounting and its effect on their self-efficacy towards generic skills: An Australian study. *Asian Review Accounting,* 18(2), 131-147.

Tabachnick, B. G. & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Education Inc.

Wu, J. H. & Hoy, W. K. (2013). Enabling school structure, collective responsibility, and a culture of academic optimism: Toward a robust model of school performance in Taiwan. *Journal of Educational Administration,* 51 (2), 176-193.

Zare, M. & Mobarakeh, S. D. (2011). The relationship between self-efficacy and use of reading strategies: the case of Iranian Senior High School Students. *Studies in Literature and Language,* 3 (3), 98-105.

Zuffianò, A., Alessandri, G., Gerbino, M., Kanacri, B. P. L., Di Giunta, L., Milioni, M., & Caprara, G. V. (2013). Academic performance: The unique contribution of self-efficacy beliefs in self-regulated learning beyond intelligence, personality traits, and self-esteem. *Learning and Individual Differences*, *23*, 158-162.