

ACHIEVEMENT MOTIVATION AS A PREDICTOR OF ACADEMIC ACHIEVEMENT OF SENIOR SECONDARY SCHOOL STUDENT IN MATHEMATICS

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ABSTRACT: *This study examined the achievement motivation as predictor of academic achievement among Senior Secondary School II students in Edo State. The study sample consisted of 698 students who were randomly sampled from the population of 27,937 students in public secondary school II students in Edo State. The sample size of this study is 2.5% of the entire population of 27,937 which is 698. The sample was drawn from the population using the multi-stage sampling technique. This involves selection of sample in stages. There are eighteen Local Government Areas in Edo State, divided into three (3) senatorial districts - Edo North (5 local Government Areas); Edo Central (6 Local Government Areas); Edo South (7 Local Government Areas). Both the independent and dependent variables were measured with relevant standardized instruments. To guide the study, three (3) research questions and a null hypothesis was raised. Data collected were analyzed using Pearson r correlation coefficient and Stepwise multiple regression statistical techniques. The results showed that achievement motivation predicted students' academic achievement in mathematics. On the basis of the findings, it was recommended that achievement motivation should be enhanced using appropriate counseling strategies.*

KEYWORDS: achievement, motivation, senior secondary, student, mathematics

INTRODUCTION

The concept achievement has several references, which could denote activity and mastery that makes an impact on the environment and competing against some standard of excellence. The under achieving student is one whose actual attainment as indicated by his scholastic attainment in school, does not measure up to his potential academic achievement as indicated by his abilities (Marsh, 2007). Marsh also defined over achievers as students whose school attainment is in excess of expectations formed on the basis of their activities. The concepts of over and under achievement suggest that there are variables in addition to ability which have positive effects on

the performance of the learner and consequently, there could be no perfect positive correlation between intelligence and attainment.

Academic achievement itself is the amount of knowledge derived from learning by the learner. The learner gains knowledge from instructions he or she receives at school which is organized around a set of core activities in which a teacher assigns tasks to students and evaluates and compares the quality of their work. The school thus provides a wide variety of achievement experiences than does the family (Tucker, 2008; Zayco, 2002; & Sullivan, 2009). These variables are therefore important to educational researchers and other related disciplines. Currently, the focus of this study is on each student's sense of self as a major component of academic achievement. According to Akomolafe (2010), academic achievement is based on several factors, such as the student's attitude, interest, personal characteristics, motivation and social class which in addition to learning are known to influence their academic achievement. The attitude that is often used in conjunction with academic achievement is achievement motivation.

Motivation is a widely researched topic in both the fields of psychology and education. Achievement motivation can best be understood by examining the meanings of "achievement" and "motivation" separately. Achievement typically stress the importance of accomplishment and attainment with effort involved (Mandel & Marcus 2005). Achievement motivation is defined as the need to perform well or the striving for success and evidence by persistence and effort in the face of difficulties, achievement motivation is regarded as a central human motivation. Achievement Motivation in the school context can be defined as a driving force that accounts for students' behaviour in achievement situations. It determines cognitive, emotional, and behavioral aspects of students' attachment and contribution to the process of education in the educational subsector (Tucker, Zayco, & Herman, 2002).

Motivation is generally regarded as the drive to achieve targets and the process to maintain the drive. Motivation provides an important foundation to complete cognitive behaviour, such as planning, organization, decision-making, learning, and assessments (Tucker, Zayco, & Herman, 2002) defined achievement motivation as task-oriented behavior. Academic achievements of individuals are often compared against standards or with others for assessments. The differing perspectives of scholars result in various definitions of achievement motivation. The original definition of achievement motivation was from Atkinson (1964), who defined it as the comparison of performances with others and against certain standard activities. Atkinson and Feather (1964) suggested that achievement motivation is a combination of two personality variables; tendency to approach success and tendency to avoid failure. (Muola, 2010) defined achievement motivation as the drive to work with diligence and vitality, to constantly steer toward targets, to obtain dominance in challenging a difficult tasks and create sense of achievement as a result. Klose (2008) defined achievement motivation as those factors that affect student's perceptions of their relationship to the achievement setting (e.g. the classroom). Several

internal and external factors contribute to the student motivational orientation in the classroom. These include organizing the relationship between effort and ability, understanding the classroom reward structures, balancing academic mastery and social competence, and choosing task of appropriate difficulty. The conceptions students have about these factors change overtime, young children in primary grades are intrinsically motivated to achieve more competence, while students in secondary and adolescents are more extrinsically motivated, this shift in motivational orientations is caused by the need to reach academic competencies, to display the expected behaviour, or to protect one sense of self-worth. Achievement motivation is a need or seated urges that push us to behave the way we do Stapleton (2001). This definition consists of three elements: the stimulation of personal capabilities, constant efforts with drive and obtaining of sense of a satisfaction.

Helmreich & Spence (2002) consolidated the theories concerning achievement motivation and compiled the Work and Family Orientation Questionnaire (WOFO). Meanwhile, they conducted a factor analysis and argued that achievement motivation consists of four elements, i.e. mastery of needs, work orientation, competition, and personal unconcern. After further studies, they found that the interaction of the first three elements is the key reason that contributes to excellent performance of individuals. It is highly related to personal achievements (Spence & Helmreich, 2004).

1. **Mastery of needs:** An individual prefers jobs that are challenging, intellectually demanding, and thought-oriented. He or she enjoys playing a leadership role in groups and is able to complete tasks already started.
2. **Work orientation:** An individual takes a proactive attitude toward work and loves what he or she does. He or she obtains a sense of satisfaction from work and pursues self-realization and growth.
3. **Competition:** An individual hopes for victory and has the desire to win over others.
4. **Personal unconcern:** An individual does not consider success or stellar performance to be the cause or being rejected by others. In other words, there is no fear of success.

According to the above literature, motivation is a subjective and internal psychological drive, enabling individuals to pursue work they perceive to be valuable and prompting them to reach their goals. Meanwhile, motivation is also a mentality to compete and compare with others.

According to definitions, as proposed by the previously mentioned scholars, achievement motivation is a subjective, internal, and psychological drive, enabling individuals to pursue work they perceive to be valuable and eventually achieve their goals. Sparrow (2007) found that motivations have an influence on the formation of psychological contracts. Achievement motivations include meaningful work, job security, and a sense of achievement, promotional channels, and opportunities. Over the years, behavioral scientists have noticed that some people

have an intense desire to achieve something, while others may not seem that concerned about their achievements. This phenomenon has attracted a lot of discussions and debates. Scientists have observed that people with a high level of achievement motivation exhibit certain characteristics. Achievement motivation is the tendency to endeavor for success and to choose goal oriented success or failure activities.

The word achievement motivation comes from a Latin word “movere” which means to move. There is a general consensus in various text books of psychology that achievement motivation is an internal cohabitation or state that energizes and gives direction to behavior (Othman, 2011). Achievement motivation is also a want or desire that energizes and directs behavior towards a goal. It is a psychological process that leads us to do certain things (Creswell, 2012). Achievement Motivation as an academic engagement refers to “cognitive, emotional, and behavioral indicators of student investment in and attachment to education” (Tucker, Zayco, & Herman, 2002). Achievement motivation has been defined as the extent to which individuals differ in their need to strive to attain rewards, such as physical satisfaction, praise from others and feelings of personal mastery. People with high achievement motives will act in ways that will help them to outperform others, meet or surpass some standard of excellence, or do something unique (Muola, 2010). All students are influenced by a need to achieve to a certain degree. Those students, who hold a high desire of success, work hard to achieve (Atherton, 2010 Awan, 2011).

According to Abraham Maslow when the need for love and belongingness is met, the individual can then focus on higher level needs of intellectual achievement. At that stage, the urge to learn, increases (Woolfork, 2004). Achievement motivation therefore is a significantly important factor for academic learning and achievement from childhood through adolescence (Elliot & Dweck, 2005). This is why Uguroglu and Walbert (2007), see achievement motivation as an important contributor to students’ achievement. Research has shown that achievement motivation is related to various outcomes such as curiosity, persistence, learning and performance (Deci and Ryan, 1985). According to the self – determination theory (Ryan & Deci, 2000) there are three types of motivation, namely, extrinsic motivation, intrinsic motivation, and a motivation.

Tella, (2007) emphasized that achievement motivation is often correlated with actual achievement behaviour. The motivation to achieve, however may evidence itself only in behaviour that children value; for example a child may be highly motivated to achieve, and this may be exhibited in athletics but not in school work. Thus, different situations have different achievement attaining values for children. Highly motivated students are probably more inclined to learn ways to cope with stress related test situations than their less motivated peers (Jen, 2008).

Okeye, (1985) in Tella, (2007) opined that achievement motivation holds the key to the understanding of human behavior. According to Okoye, achievement motivation explains why

one individual dodges work, another works normally satisfactorily enough to reach the height, while yet another resort to illegal and unconventional methods of achieving social, academic, economic and political recognition. He added that achievement motivation should be carefully manipulated whether in the work situation or study situation, so that our students are neither under motivated nor over motivated but appropriately motivated so as to be useful to themselves in their society and the world at large.

Achievement motivation forms the basis for a good life. People who are oriented towards achievement, in general, enjoy life and feel in control. Being motivated keeps people dynamic and gives them self-respect. They set moderately difficult but easily achievable targets, which help them, achieve their objectives. They do not set up extremely difficult or extremely easy targets. By doing this they ensure that they only undertake tasks that can be achieved by them. Achievement motivated people prefer to work on a problem rather than leaving the outcome to chance. It is also seen that achievement motivated people seem to be more concerned with their personal achievement rather than the rewards of success.

In Nigeria, the importance attached to academic success in secondary school education can be seen in the anxiety of educators, teachers and parents over the achievement of students in external examinations such as the Senior Secondary School Certificate Examination (SSSCE). This is why the Federal Government of Nigeria places high premium on the Secondary level of education, which is evident in the establishment of National Examination Council (NECO) to conduct Senior Secondary School Certificate Examination (SSSCE) along the West African Examination Council (WAEC) for senior secondary school students in Nigeria. The same emphasis on education has led to the adoption of education as “an instrument par excellence” for effecting national development (Federal Government of Nigeria, (FGN, 2004).

In view of the high premium placed on educational attainment by government, teachers, parents and students, underachievement or poor achievement in examination is a very thorny issue that has attracted the attention of researchers and psychologists alike. The aim of psychologists and educators in this regard has been to determine variables (both internal and external to the students) which are related to their educational achievements. In Nigeria, some external variables such as overcrowded classroom, inadequate facilities, unmotivated teachers, poor family background etc have been identified as being negatively related to academic achievement of students (Cokley, 2005).

Statement of the Problem

The poor academic achievement of senior secondary school students (SSSS) within Nigeria educational system has been attributed to a number of factors including individual, family, community, cultural, and societal factors (Federal Ministry of Education, 2016).Tella, 2007). Despite the fact these factors have been researched into and efforts made to arrest the situation, it has not experienced a positive change and this has become a great concern. Suffice to say that in

Nigeria, few researches have been carried out on this subject matter. This is an important gap which this study intends to fill. The problem of the study, therefore, is to find out whether achievement motivation predicts academic achievement of Senior Secondary School Students (SSSS).

Purpose of the Study

The purpose of this study is to explore the predictive ability of achievement motivation and academic achievement of Senior Secondary School Students in Edo State.

Research Questions

The following research questions guided the study:

- 1 What is the level of achievement motivation among Senior Secondary School Students in Mathematics in Edo State?
- 2 What is the level of academic achievement in Mathematics among Senior Secondary School Students Edo State?
- 3 Does relationship exist between achievement motivation and academic achievement of Senior Secondary Schools' Students' in Mathematics in Edo State?

Hypotheses

The following null hypotheses were tested in this study:

There is no significant relationship between achievement motivation and academic achievement in Mathematics among Senior Secondary School Students in Edo State.

Significance of the Study

This study seeks to find out whether achievement motivation correlates with academic achievement of Senior Secondary School Students in Edo State. The results will therefore be useful and beneficial to stakeholders in educational sectors, namely students, parents, teachers, principals and policy makers

METHODOLOGY

The study adopted the correlation research design. The total population of these students is 27,937. Only the state schools were chosen to make for homogeneity. The sample size of this study is 2.5% of the entire population of 27,937 which is 698. The sample was drawn from the population using the multi-stage sampling technique. Stage 1: Two Local Government Areas were chosen from each of the three Senatorial Districts, by using simple random sampling technique, which gave a total of six (6) Local Government Areas. Stage 2: Out of these six local government areas, two schools were selected using the simple random sampling technique. This

gave a total number of twelve (12) schools. Stage 3: From the selected schools, 698 students' were proportionally sampled.

Result

RESEARCH QUESTION 1: What is the level of achievement motivation in Mathematics among Senior Secondary School Students in Edo State?

Table 1

Achievement Motivation of SSCE Students

	SEX					
	Male		Female		Total	
	Mean	SD	Mean	SD	Mean	SD
Even when I feel that my lessons are difficult, I still try to do them	3.96	1.24	3.99	1.15	3.95	1.20
I work hard in class so that I can know more than other students about a subject	3.77	1.20	3.89	1.12	3.83	1.16
Getting my SSCE means I will be able to achieve my future goals	3.77	1.24	3.82	1.23	3.79	1.24
I like to complete every assignment given to me and do it well	3.73	1.18	3.81	1.12	3.78	1.15
I am incited with good comments by my teacher	3.69	1.16	3.78	1.18	3.75	1.17
I want very much to prove to my parents and teachers that I am good academically	3.53	1.25	3.62	1.22	3.61	1.24
I Usually keep on working at a problem until I am sure I can solve it.	3.42	1.21	3.59	1.16	3.50	1.19
I like opportunities to compete with others for academic prize of honor	3.47	1.25	3.50	1.32	3.49	1.28
Even though an assignment is dull, I stick to it until it is completed	3.38	1.21	3.38	1.26	3.38	1.24
After classes I make it a definite point to look up things that were not clear in class	3.24	1.22	3.33	1.24	3.28	1.23
I have several times stopped doing a task because I thought I do not have the ability to do it well	3.34	1.25	3.13	1.31	3.24	1.28
If I have difficulty with my work, I try to discuss the trouble with my teachers.	3.01	1.32	3.16	1.30	3.09	1.31
I would rather avoid academic problems at which I have once failed than try it again.	2.91	1.35	3.08	1.35	3.00	1.35
I do less work on a problem when it looks as if I don't know the answer	2.86	1.26	2.81	1.25	2.83	1.26
I tend to become easily discouraged when I do not succeed in my academic work.	2.73	1.43	2.79	1.40	2.76	1.41
Average	3.38		3.44		3.41	

**Agreed (mean >3.00)*

Table 5 shows the students' achievement motivation. The pooled mean values indicate that the students agreed to several of the statements in the table regarding their achievement motivation, since most of the mean scores are greater than 3.00. The statements with high level of agreement

among the students' are the fact that "even when I feel that my lessons are difficult, I still try to do them" (mean = 3.99); "I work hard in class so that I can know more than other students about a subject" (mean = 3.83); "getting my sssce means I will be able to achieve my future goals (mean = 3,84); "I like to complete every assignment given nto me and do it well" (mean = 3.78); "I am incited with good comments by my teacher" (mean = 3.73).However the statement with low level of agreement is "I tend to become easily discouraged when I do not succeed in my academic work (mean = 2.76).

RESEARCH QUESTION 2: What is the level of academic achievement (performance) in Mathematics in mathematics among Senior Secondary School Students in Edo State?

Table 2

Level of Academic Achievement in Mathematics among SSCE Students

Score (%)	Male			Female			Total		
	Freq	%	Mean	Freq	%	Mean	Freq	%	Mean
<= 39	34	10.1		21	6.1		55	8.1	
40 – 49	100	29.6		117	33.9		217	31.8	
50 – 59	138	40.8		134	38.8		272	39.8	
60 – 69	58	17.2		64	18.6		122	17.9	
70+	8	2.4		9	2.6		17	2.5	
Total	338	100		345	100.		683	100	
Mean			51.3			52.3			51.8

The pooled result of Table 6 shows that the academic achievement of students are 50-59% (39.8%), followed by 40-49% (31.8%). The average score of the students in mathematics is 51.8%, while that of the male and female students are 51.3% and 52.3% respectively.

TEST OF HYPOTHESIS

Hypothesis: There is no significant relationship between achievement motivation and academic achievement in Mathematics among Senior Secondary School Students (SSSS) in Edo State.

Table 3

Pearson product moment correlation analysis of relationship between achievement motivation and academic achievement in Mathematics

Independent variable	Mathematics Test Score		Probability level
	Correlation coefficient (r)	r ²	
Students' achievement motivation	0.713*	0.508	0.05

*Correlation is significant at the 0.05 level ($p < 0.05$)

Correlation analysis was used to analyze the relationship between achievement motivation and their academic achievement in mathematics. The results presented in Table 8 shows that the correlation coefficient is 0.713, which is very high and significant at the 5% probability level. The coefficient of determination, (r^2) is 0.508. The null hypothesis is rejected. It means that there is significant relationship between achievement motivation and academic achievement in mathematics

CONCLUSION

It was discovered from the study that achievement motivation significantly predicts academic achievement of senior secondary school students. From the result, it is observed that achievement motivation proved to have a stronger relationship of students' academic achievement in mathematics. It was also seen that students' achievement motivation displayed significantly more perseverance and effort, achievement drive, as well as reported better social and motivational relationship with academic achievement in mathematics.

Recommendations

Based on the findings of this study, the following recommendations are hereby made:

Students should be encouraged to build positive achievement motivation this will enhance their academic achievement.

Teachers should encourage students to recognize their achievement motivation, this will enhance and improve their performance and it will give them the opportunity to compare their standard of performance with others.

The principal should encourage and motivate teachers by organising seminars, staff development and co-operation, the time and the necessary support to teachers and counselors to enable them help students improve on their academic achievement. The policy makers and educational planners are encourage to develop and implement policies and strategies that would help in alleviating problems of students thereby fostering the academic success of students. The government and the Ministry of Education are encouraged to provide the needed facilities for schools to enhance a good and adequate environment of learning.

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