

Self Efficacy And Academic Achievement In Geography Among Secondary School Students

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Abstract

The study focused on self efficacy and academic achievement in Geography among secondary school students. Three purposes and three research questions guided the study while two hypotheses were tested. The population of the study was 1036 senior secondary school students who offered Geography in 2018/2019 West African Senior Secondary School Certificate Examination (WASSCE). All the students were studied. The General Self Efficacy scale and a teacher made test on Geography were instruments employed for the study. The research question one was analyzed using the mean and standard deviation while research questions 2 and 3 were analyzed using the Pearson Product Moment Correlation Coefficient. The hypotheses were tested using the t-test statistics. The results, among others, revealed that males had higher mean in geography test than females; there is a significant positive relationship between self efficacy and academic achievement of male and female students respectively. It was recommended among other things that school counsellors should mount programmes for students in order to enhance their self efficacy while females should be given more freedom like the males to enable them explore their environment and build up their self efficacy level.

Keywords: *Self efficacy, academic achievement and gender.*

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I. Introduction

The belief one has about one's ability to succeed in a difficult task seem to be an encouraging force towards accomplishing the task at hand including other related tasks. Such belief is generally referred to as self-efficacy. Self efficacy is a cognitive factor which refers to one's perceived capabilities for learning or performing some actions at desired levels (Bandura, 1977). It implies that self efficacy reflects the confidence people have in their ability to exert control over one's own motivation, behaviour and social environment (Victor-Aigbodion & Ngwoke, 2017).

Virtually some people can identify goals they want to accomplish, things they would like to change things they would like to achieve. However, some people might realize that putting those plans into action are not quite simple, hence Bandura (1977) and Victor-Aigbodion and Ngwoke (2017) found out that individuals' self efficacy plays a major role in how goals, tasks, and challenges are approved and solved. One's level of self efficacy can be used to determine whether a task will be initiated, the amount of effort that will be expended and the level of persistence one will use to complete the task when faced with obstacles and aversion experiences (Bandura, 1977). It follows that once a person has acquired a high level of self efficacy belief, the individuals will become motivated to invest more effort in their life endeavour. Self efficacy can be described as the perceived understanding one has about one's ability to succeed in a given task irrespective of the difficult nature of such task. Self efficacy seems to be developed from the external experiences one acquires and individual's self perception. Such experiences and perception might help to determine the outcome of many events hence self efficacy is an important aspect of social cognitive theory. One of the main concepts of social cognitive theory is that in some situations one's actions and reactions including social behaviour and cognitive processes are influenced by the actions which the individual has observed in others (Nevid, 2009).

Self-efficacy would be an indicator of students' academic achievement because it might be used to predict academic achievement (Baji & Sarki, 2017). Self efficacy appears to affect every area of human endeavour. By determining the belief a person holds regarding one's power to affect situations, it might strongly influence both the power a person actually has to face challenges competently and the choice a person would likely make. Such effects are particularly more pronounced and compelling with regard to behaviours affecting academic achievement (Luszczynska & Schwarzer, 2008). Students with high self efficacy seem more likely to view difficult tasks as something to be mastered rather than something to be avoided (Bandura, 1988). It

therefore appears that people generally avoid tasks when their self efficacy is low, but undertake tasks when their self efficacy is high. However, when their self efficacy is significantly beyond actual ability, it might lead to an overestimation of ones ability to complete tasks. On the other hand when self efficacy is significantly lower than actual ability, it might further discourage growth and skill development.

Self efficacy is a multidimensional concept. It is both domain specific and context dependent. High self efficacy in a particular domain may not necessary translate into having similar level in another domain. It means that within the same domain, there may be different levels of self efficacy beliefs occurring in various contexts. High self efficacy can affect motivation in both positive and negative ways. It can make some people to experience incentives to learn more about an unfamiliar subject while in some others it might make them not to prepare well for such a task (Bandura, 1994).

Furthermore low self efficacy might lead to some people to perceive tasks to be harder than they actually are. Such situation might often result in poor task planning as well as increased stress. Such people might be erratic and unpredictable when engaging in a task in which they have low efficacy. Conversely students with high self efficacy might tend to take a wider view of a task in order to determine the best plan. Obstacles often appear to stimulate such students to greater effort while those with low self efficacy might tend towards discouragement and consequently give up.

Consequent on the above attributes of self efficacy some students might be more likely to challenge themselves with new and difficult task and to be intrinsically motivated. Such students might put forth more effort in order to meet their commitment; attribute their failures to things which are in their control rather than blaming external factors. They may also recover quickly from setbacks and ultimately achieve their personal goals. Students with low self efficacy believe they cannot be successful and are less likely to make a concerted, extended effort; consider challenging tasks as threats that are to be avoided. The above situations might particularly be true of students achievement in geography.

When you succeed through your effort in a task it means an achievement (Puttock 1985). Students should make their studies their first priority; stay committed to their studies, pay attention in classroom, set smart goals to be achieved, avoid distraction in order to succeed academically. Academic achievement is variously defined. It is the performance outcome indicating the extent one accomplished a specific task (Kwankwaso & Abubakar, 2018); an indicator of academic engagement (Aletan & Qudrat, 2018). Regardless of the views expressed what is central is that academic achievement is the yardstick for assessing whether a student has learnt the skills taught or not. The instrument used for such assessment is usually continuous assessment and/or end of term or end of year examinations. Ones academic achievement might be influenced by the degree of anxiety, environment, motivation and sometimes emotions (Mgboro, 2017). The belief the student has about his achievement can strengthen or weaken his perception about his ability to study a particular subject (Bandura, 2006). It follows that the perceived ability of the individual might be related to ones academic achievement, hence the present study on self efficacy and how it relates to academic achievement in geography is embarked upon.

The researcher observed that geography is scarcely offered as a subject in West African Senior School Certificate Examination (WASSCE). The study of geography started in ancient Greece and was established as an academic discipline in mid 1800s (Goe, 2008). The subject enables students to explore and understand the relationship between the earth and its people through the study of space, place and environment.

The low enrolment in geography during WASSCE might be an indication of low self efficacy of Bayelsa State students. From 2015-2018 students enrolment for Geography in WASSCE were 249 of which 186 were boys and 53 were girls. It follows that the evaluation boys and girls make of their abilities and the conviction arising from such evaluation appear to enable few boys and girls to register for Geography. The notion that boys have more self efficacy than girls seem to be entrenched in the cultural beliefs and practices. Societal factors create gender differences in gaining access to primary sources of having self efficacy (Sieben, 2016). Sieben posited that females gain less access to role models, receive less encouragement to pursue some vocations, have little opportunities to perform in male dominated vocations, and experience much more anxiety which decrease their perception of self-efficacy. Male students have more salient independent self than females who have more interdependent self (Kahveci, 2015). Despite the above examples researchers disagree as to whether there are differences in expression level of self-efficacy between boys and girls (Tewan, 2013).

Some students can set goals they want to accomplish and achieve, however some realize that putting those plans into action is not quite simple hence self efficacy plays a major role in how goals, tasks and challenges are approached and solved. Self efficacy appears to determine whether a task can be initiated and the level of persistence one will use to accomplish the tasks when faced with obstacles and aversive experiences. Individuals who perceive themselves to be self efficacious in a particular task might perform low in some other tasks while one who perceives himself to have low self efficacy might perform high in some other task. Moreover, it is not certain whether boys have more self efficacy than girls. The problem of the study therefore

is, what is the relationship between self efficacy and academic achievement in Geography among Bayelsa secondary school students?

The study specifically determined the:

1. academic achievement mean of male and female secondary school students in geography.
2. relationship between the self efficacy of male students and their academic achievement in Geography.
3. relationship between the self efficacy of female students and their academic achievement in geography.

Three research questions guided the study:

1. What is the academic achievement mean of male and female secondary school students of Bayelsa State in Geography?
2. What is the relationship between the self efficacy of male students and their academic achievement in geography?
3. What is the relationship between the self efficacy of female students and their academic achievement in geography?

Two hypotheses were tested

1. The relationship between, the self efficacy and academic achievement of male students in Geography is not statistically significant.
2. The relationship between the self efficacy and academic achievement of female students in geography is not statistically significant.

II. Methodology

The design of the study was a correlation survey. It was carried out in all public secondary schools in Bayelsa State. The state has eight(8) education zones which are Brass, Ekeremor, Kolokuma/Opokuma, Nembe, Ogbai, Sagbama, Southern Ijaw, Yenagoa. The people are predominantly fishermen and civil servants. It is a riverine area experiencing oil pollution. It means that living in Bayelsa State demands determined, resolute, focused decision in order to survive in the harsh environment. 1036 senior secondary III students who registered for Geography in 2018/2019 academic session formed the population of study. The total number of schools from where students offered Geography was 137 from the 8 education zones. The number of students who offered Geography from each of the zones were as follows- Brass 51 Ekeremor 93; Kolokuma/Opokuma 85; Nembe 103 Ogbai 120, Sagbama 192, Southern Ijaw 207; Yenagoa 185 (Bayelsa State post Primary Schools Board 2019). A total of 1036 students who registered for Geography in 2018/2019 West African Senior Secondary School Certificate Examination were studied using the census method.

The instruments employed were (1) General self efficacy (GSE) development by Schwarzer and Jerusalem (1995). It assessed the perceived self efficacy with a view to predicting the coping ability with daily hassles and adaption after experiencing stressful events. It is administered on people aged 12 years and above. The required time for answering the items was 4 minutes on the average. It is scored as, not at all true (1) Hardly true (2) Moderately true (3) Exactly true (4). A higher score indicates more self efficacy.

(2) The second instrument was a teacher made test on Geography. The test items were adopted from WAEC/WASSCE examination questions in Geography for 1989 to 2018 academic years.

The GSE was validated by the authors using criterion-related validity. In the present study the two instruments were face validated by three lecturers, one specialist in measurement and evaluation and two specialists in Educational Psychology, all from Ebonyi State University, Abakaliki. Thirty copies of GSE questionnaire were trial tested using students from River State, Nigeria. The original instrument had internal reliability ranging from .76 to .90. In the present study the reliability of the GSE was established for male (.538) and female (.826) students. The result showed that the instrument was reliable.

The researcher used direct contact approach and three research assistants to collect data from the students. Research question I was analyzed using the mean and standard deviation. The research questions 2 and 3 were analyzed using Pearson Product Moment Correlation Coefficient while the hypotheses were analyzed using t-test.

III. Results

Research question I: What is the academic achievement mean of male and female secondary school students of Bayelsa state in Geography?

Data collected with the Geography achievement test that was administered to the students was used to answer the research question. The data were analyzed and presented descriptively using mean and standard deviation. Summary of the result is presented in table I below.

Table 1: Summary of the secondary school students achievement in geography

Students	Mean	SD	N
Male	55.10	18.77	469
Female	51.33	18.49	560
Total	53.33	18.68	1029

The result in table 1 above shows that male students have 55.10 higher achievement score in Geography than their female counterparts who had 51.33. The overall mean for the students' academic achievement in geography was high.

Research Question 2: What is the relationship between the self efficacy of male students and their academic achievement in geography?

Date collected on male students using self efficacy test (x) were correlated with the data on their academic achievement in geography (y) using a linear model. The summary is presented below in table 2.

Table 2: Relationship between self efficacy and academic Achievement scores of male students in geography.

Computed r	r square	Adjusted r square	Standard Error
.87344	.76289	.76238	9.15148

Data presented in table 2 above revealed that the computed r is .87344 implying a strong positive relationship between self efficacy and academic achievement scores of male students in Geography.

Research Question 3: What is the relationship between the self efficacy of female students and their academic achievement in geography?

Data collected on female students' self efficacy (x) were also correlated with data on their academic achievement in Geography (y) using a linear model. Summary of data is presented in table 3.

Table 3: Relationship between female students' self efficacy Achievement in Geography.

Computed r	r square	Adjusted r square	Standard Error
.95711	.91606	.91591	5.36237

The computed r is .95711, implying a strong positive relationship between female students self efficacy and academic achievement in Geography.

Hypotheses 1: The relationship between the self efficacy and academic achievement of male students in Geography is not statistically significant.

Table 4: Test of significance of relationship between self efficacy and academic achievement of male students in Geography.

Computed r	r square	Adjusted r square	Standard Error	Beta	t	Sign of t
.87344	.76289	.76238	9.15148	.873435	38.763	.0000

The above table reveals the alpha level (0.05) is greater than the significance of t (0000) therefore the null hypothesis is rejected. It means that the relationship between self efficacy and academic achievement of male students in Geography is statistically significant.

Hypothesis 2: The relationship between the self efficacy academic achievement of female students in Geography is not statistically significant.

Table 5: Test of significance of Relationship between Self Efficacy and Academic Achievement of female students in Geography

Computed r	r square	Adjusted r square	Standard Error	Beta	t	Sign of t
.95711	.91606	.91591	.5.36237	.957109	78.035	.0000

The table above reveals the alpha level (0.05) is greater than the t significance value (.0000). Based on the data above the null hypothesis is rejected. It means there is a significant relationship between self efficacy and academic achievement of female students in Geography.

IV. Discussions

The discussion is organized according to the research questions and hypotheses postulated.

Academic achievement mean of secondary school students of Bayelssa in Geography.

The result of the study as shown in table 1 indicated that the academic achievement mean of the students in Geography was 55.10 and 51.33 for male and female students respectively. Their overall mean was 53.33. Based on the mean score it could be said that the academic achievement level of the students in Geography is high. It means that the students can solve difficult problems in Geography at high level, they can be confident of dealing with some problems in Geography at high level. Their ability to be resourceful at solving Geography problem was at high level. Furthermore it can be inferred from the above result that where the students decide to invest more effort towards solving difficult problems in Geography their ability to cope with those challenges and ability to think of solutions to the problems facing them in Geography can be increased, consequently their academic achievement level would also be high. This might account for Bandura's assertion that ones level of motivation and observed behaviours determine more than what the individual does with the knowledge and skills at ones disposal (Bandura, 2006). It could also be said that though students were confident of tackling problems in Geography the observed effort as revealed in their academic achievement scores was not commensurate with their academic self efficacy (beliefs). It means their perception of their competencies to solve Geography problems was not manifested in actual solution to Geography problems. It should be noted however that achievement alone does not provide enough information to judge one's level of capability because other little factors (emotional state, peer influence, overestimation of ones ability) can influence significantly academic achievement (Bandura,1977). The high academic achievement of students on the study could be said to be related to their moderate level of self efficacy (Table 2 & 3). The finding therefore lends support to Bandura's idea that one's level of self efficacy significantly determines ones level of performances. It means the students possessed the repertoire of skills needed for achievement in Geography just in line with their moderate self efficacy.

Relationship between self efficacy and academic achievement scores of male students in Geography

Research question 2, table 2 revealed the relationship between self efficacy and academic achievement scores of male students in Geography. The computed r was .87344 while the coefficient of determination was .76289. It means that 76% of the academic achievement scores of male students in Geography was due to the self efficacy of the male students. Furthermore hypothesis 1 table 5 revealed there was a significant relationship between self efficacy and academic achievement of male students in Geography. The alpha level (.05) of 38.763 is greater than the significance of t (.0000). It means there is a significant relationship between self efficacy and academic achievement of male students in Geography. Research findings on self efficacy and academic achievement of male students had yielded inconsistent results. While Moturi (2012) discovered no significant relationship between self efficacy and male achievement scores, Shkullaka (2013) discovered there was a significant relationship between male achievement scores and self efficacy. The findings from the present study supports what Shullaka (2013) discovered. The self efficacy mean of the males might also stem from the freedom given to them in the course of growing up. Males are permitted to play, express their emotions and explore the environment. Such freedom influences the way the males see themselves, the extent they attribute their success to their self efficacy and consequently personal ability as expressed in academic achievement. What it means is that the self belief (self efficacy) the males have about themselves facilitate their academic achievement. It follows that the way the males interpreted their past life and experience might have accounted for their subsequent success in Geography test (Pajares, 2002).

Relationship between self efficacy of female students and their academic achievement in Geography.

Research question 3, table 3 focused on finding the relationship between self efficacy of female students and their academic achievement. Hypothesis 2, table 5 tested the significance of the relationship between self efficacy and academic achievement of female students in Geography. It was discovered that there was a significant positive relationship between female students' self efficacy and academic achievement. The achievement of the females in the study might be due to the beliefs they hold about their capabilities of what they are actually capable of accomplishing. This is because some females suffer frequent bouts of self doubt about the capabilities they possess. Ones belief and reality are therefore seldom perfectly matched (Bandura 1977). The traditional practices of different families in form of perception, thoughts and actions tend to guarantee the belief the females have of themselves (self perception). From childhood females are made to fit into the conventional norm while those who behave otherwise attract the label 'Tom boy' (Mgboro, 2004). Moreover, the school environment serves a model for the society hence gender differences in roles are also present there. What it means is that self efficacy develops through the roles children play in their families and those roles might also be influenced by the social factors which create gender differences. As it affects self

efficacy (Spade & Valentine, 2011), family environment was discovered by Navrendra, (2017) to be the most powerful influence in determining female students' academic achievement. The author observed that females have fewer performance opportunities, less exposure to models and have higher anxiety that decrease perception of self efficacy. The result of the present study therefore confirms the view that though social factors decrease females perceptions of self efficacy it is really their efficacy that determined their ability to tackle challenging tasks as experienced in the Geography test (Stajikovic, Lee, Greenwald, Raffice, 2015).

V. Conclusions

Based on the finding of the study the following conclusions are made:

1. Male students have higher self efficacy than their female counterparts.
2. A significant relationship exists between self efficacy of male students and their academic achievement in Geography.
3. A significant relationship exists between self efficacy of female students and their academic achievement in Geography.

Educational Implications

1. The differences in self efficacy and academic achievement mean of male and female students reveal there are some social practices and values that encourage differences in self efficacy of male and female students. Providing specific toys and clothes etc for males and females encourage differences and consequently influences their self efficacy.
2. The child rearing practices in the traditional families which lead to conformity docility, and asking females to go and stay with their fellow females are also encouraged by the school social environment. Not allowing female students to explore the environment, and reminding them not to compete with their male counterparts are practices which seem to be encouraged by the school.

VI. Recommendations

The following recommendations are made:

1. The social practices and values should be reviewed in order to eliminate gender differences in self efficacy and achievement of students. Teachers should provide unbiased gender responsibilities to the different sexes in order to enhance the self efficacy of both males and females.
2. Girls should be given enough freedom like boys to explore their environment and express their emotion. Success in Geography demand freedom to explore the environment and express ones emotions.
3. School administrators should ensure that traditional values which enhance self efficacy as witnessed in music, folklore and smiles are taught in the school system. Currently it appears teachers pay less attention to teaching those values though they are provided in the curriculum.
4. School counsellors should mount programmes for students in order to help build the confidence, self concept and self efficacy of male and female students.

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