

PREDICTIVE POWER OF ACADEMIC SELF-EFFICACY ON ACADEMIC RESILIENCE AMONG SECONDARY SCHOOL STUDENTS

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Abstract

Low level of resilience among secondary school students constitutes a major problem leading to students' attrition. The current study investigated the predictive power of academic self-efficacy on academic resilience among secondary school students in Nsukka Education Zone of Enugu State, Nigeria. Sample consisted of 1320 junior secondary two (SSII) (637 male and 683 female) students who were drawn through multi-stage sampling techniques, from 10 public coeducational secondary schools in the area of study. Two instruments were used to collect data for the study; they are Academic Risk and Resilience scale (ARRS) (Martin, 2013) and General Academic Self-efficacy Scale (GASES). Data collected were analyzed using Pearson correlation statistics to answer research questions and regression analysis to test hypotheses at 0.05 alpha levels. Result showed a significant positive predictive power of self-efficacy on resilience. Gender revealed no significant moderating influence on the predictive influence of self-efficacy on academic resilience. It was recommended among others that attempts should be made by teachers and other education stakeholders to build and sustain a strong sense of self-efficacy in students in order to improve resilience among secondary school students.

Introduction

The ability to try, fail and then try again is an important one for students to master academic tasks. Many students' prefer instant gratification of first time success and lack the skill to respond to failure positively and proactively. In school settings, students stand at-risk of experiences, conditions and situations that threaten their long term and short term goals leaving them with the tendency of attrition involving departure from or delay in successful completion of program requirement (Ascend Learning, 2012). In such situation, retention of students through grades becomes a major challenge to all education stakeholders (Lereya, Neil, Praveetha,

Miranda, Bohnke, Amy & Deighton, 2016) and has great negative impact on social and economic facets of the society (Seligman, 2011).

Research (Schultze-Lutter, Schimmelmann & Schmidt, 2016), has shown that adversities, challenges and threat surrounding academic situation put majority of secondary school students at increased vulnerability to drop-out from school. Some of such adversities could present in forms of chronic underachievement, perceived academic stress and maladjustment to academic-social environment (Schultze-Lutter et al, 2016) which often climax at students dropping-out of school. To overcome these threats and stress posed by academic condition and yet persevere to overcome proactively all the risk experiences with positive outcomes, students need a quantum of resilience (Seligman, 2011).

Resilience refers to a successful compromise of a person despite the adverse environmental conditions and threatening situations he/she is experiencing (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006). According to Keye, & Pidgeon, (2013) resilience is best defined as successful adaptation to adverse circumstances. Resilience does not only denote adaptation, it is a proactive adaptation which leads to healthy outcomes after stressful situation (Keye, & Pidgeon, 2013). Pidgeon, and Keye, (2014) noted that the concept of resilience is reflected on desires for great optimum performance under adversity, holding a generalized favourable expectances for future.

According to Tudor & Spray, (2017), academic resilience is the heightened likelihood of success in school and other life accomplishments despite the adversities brought about by early traits (e.g prior achievement), conditions (social environments) and experiences (academic demands and threats). Despite all the discrepancies in conceptualizing resilience, most definitions are centred on two concepts: adversity and positive adaptation (Windle, Bennet & Noyes, 2011). Another important aspect of resilience is the protective factors which are those influences that modify, ameliorate or alter a person's responses to adversity (Sarkar & Fletcher, 2013). Such protective factor could include positive affects, self-esteem, extraversion, social support and optimism (Sarkar & Fletcher, 2013).

In this study, academic resilience is the ability to successfully cope with changes or adversity in academic situations; and dynamic processes of overcoming the negative effect of risk experiences with positive outcomes, avoiding negative trajectories associated with such risk. The literature on resilience among children and adolescents shows that resilience tends to be dichotomized (Pidgeon, & Keye, 2014) into individual focused characteristics and protective factors. In general, individually focused characteristics are identified through strategies directed towards modifying internal goals, problem solving strategies, and feelings of self-worth. Protective factors, on the other hand, focus on coping, and are reflected in strategies directed towards regulating or modifying external resources or support. Research has provided evidence for the significant role of resilience, when it is conceptualised as successful adaptation despite risk. For example, resilience has been used to characterise individuals who overcome difficult and challenging life circumstances and risk factors (Tusaie, Puskar, & Sereika, 2007).

Resilient students have the required skill to engage in social relations that would enable them seek help from peers and others, see failure as something that can be overcome rather than an insurmountable obstacle; being able to tackle problems from a variety of viewpoints. Resilient students are autonomous learners who have the confidence and skill to tackle questions and challenges independently. They extend learning far beyond classroom and develop real love for learning which pervades everything they do (Estaban & Martins, 2014). They are also motivated intrinsically through positive feeling enjoyed through learning experiences.

Previous literature tends to show that resilience moderate the effect of stress and failure in the midst of challenges that threaten students' cognition and academic outcomes (McGillivray & Pidgeon, 2015). Growing research also identify that resilience promotes mental health human development, inter-personal relationships and creativity (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006). On the other hand, students with low resilience reported higher perceived stress, anxiety and depression in chronic adversity (McGillivray & Pidgeon, 2015). Research tends to observe that for college students to cope with emotional change of frustration, confusion and discouragement, and yet be retained until graduation, establishing high level of resilience is paramount and positive self-efficacy is complementary (Raskauskas, Rubiano & O hen, & wayland, 2015).

Self-efficacy refers to an individual's perception of his ability to organise and execute actions required for designated type of performance (Bandura 1986). Jerusalem and Schwarzer, (2000) defined self-efficacy as the belief that one can perform novel or difficult task, or cope with adversity in various domains of human functioning. Self-efficacy is a major product of Bandura (1986) social cognitive theory which emphasises the reciprocal interplay between personal factors, behavioural actions and environmental factors. Bandura observed that students' motivation and performances can be moderated by self-efficacy beliefs, environmental factors such as classroom structures and social interaction with peers. Self-efficacy differs from other personal characteristics in that it is a judgement of capability to perform and not that of personal quality or self-worth. It is an expectancy belief which is always measured before rather than after task-performance (Webb-Williams, 2014).

Academic self-efficacy manifest in students' effort expenditure, persistence, thought patterns and emotional reactions when confronted with academic circumstances, thus, Webb-Williams, (2014) identified that students with strong sense of self-efficacy are more motivated to achieve their academic goals; that they put more effort into achieving their goals and they persist even when faced with the issue that they may fail. This capacity to produce valued outcomes and prevent undesired ones provides powerful incentives for the development of and exercise of personal control. Invariably, it has been found that a strong self-efficacy is required in overcoming obstacles through perseverance and efforts (Raskauskas, Rubiano & O hen, & wayland, 2015)

Self-efficacy is also important is self-regulation, motivation to guide actions, and anticipation, optimism towards positive academic outcomes and life-long

learning. It helps in goal setting and planning of course of actions that lead to attainment of set goals (Webb-Williams, 2014). Thus, academic self-efficacy has been shown to be better predictor of performance than either prior achievement or ability (Cassidy, 2012). On the contrary, a low sense of self efficacy increases vulnerability to scholastic anxiety putting the students at risk of eventual drop out or discontinuity (Raskauskas, Rubiano & O hen, & wayland, 2015). It has been found that low self-efficacy and lack of resilience are linked to difficulties in academic preparation aspiration and attainment in secondary school settings (Chatburn, Coussens, & Kohler, 2014). Consequently, developing a strong sense self-efficacy and resilience could mediate the effects of negative social and academic experiences and help at risk college students to be retained through college grades.

Researchers have reviewed resilience as a process that changes over time and context, putting greater emphasis on interaction between individuals and their environment (Tudor & Spray, 2017). The increasing conceptualization of resilience as a dynamic process which varies across time and context has led to considerable research focusing on understanding how resilience changes across context and time; and factors that actually account for the variations in academic settings. Martin and Marsh, (2006) reported that self-efficacy is one of the factors having positive predictive influence on academic resilience maintaining that resilient students were high in academic self-efficacy. However, it is not clear what the predictive power of academic self-efficacy is on secondary school students' academic resilience. The present study aims to find out the predictive power of academic self-efficacy on secondary school students' resilience in academic circumstances.

Gender differences in students' academic self efficacy have variously been researched. Hang, (2013) found a small but significant gender difference in self-efficacy across 187 young aged student which was in favour of males. On the contrary, some studies identified gender differences in academic self-efficacy in favour of girls (Marks, 2008; Webb-Williams, 2014). So, the inconsistency in the directions of gender differences in self-efficacy necessitates further research. Furthermore, it is not yet clear if gender difference in self-efficacy can moderate the predictive power of academic self-efficacy on academic resilience.

In order to understand the significance of resilience factors in coping with risk factors, several studies have focused their attention on the influence that individual characteristics such as gender have on individual's ability to cope with risk factors within their environment. Prior studies indicate that gender has a notable effect on a child's coping strategies. Younger boys and girls, and boys from all age groups tend to make more use of adaptive coping strategies that focus on the immediate problem (McGillivray, & Pidgeon, 2015). There is also evidence that girls cope with daily stressors by seeking social support and utilising social resources (Joet, Usher & Bresoux, 2011). In contrast, boys use physical recreation such as sport to cope with adversity (Joet, Usher & Bresoux, 2011). On the other hand, girls have been found to use resilience factors such as seeking and getting support more than boys, and girls use these resilience factors more than boys (McGillivray, & Pidgeon, 2015).

However, Martin and Marsh (2009) proposed that students can learn to be more academically resilient through the development of positive cognitive, affective and behavioral orientations to school and academic life, which they suggested may be more electively achieved by increasing individuals' exposure to protective and enabling factors. Hjemdal, Friborg, Stiles, Rosenvinge, and Martinussen, (2006) point out that as it is not possible to control the extent to which individual students are exposed to adversity, the focus should be on interventions aimed at improving resilience in those at risk of negative outcomes associated with adverse experience differences between boys and girls in terms of protective factors, where boys show lower scores than girls.

Female students are found to be more likely to report higher levels of communication, empathy, help-seeking, and goals for future and aspirations. They also report more positive connections with parents, teachers and adults in the community, and peers in school and outside school, as well as sense of autonomy experience. However, it is not clear whether there is a significant gender influence in students' resilience towards academic pursuits. It is not also clear if such differences could moderate the predictive influence of self-efficacy on academic resilience of boys and girls. Thus, the current study sought to bridge this gap.

Research Questions

1. What is the predictive power of Academic self-efficacy on students' resilience?
2. To what extent does gender moderate the predictive power of self-efficacy on academic resilience of secondary school students?

Research Hypotheses

H₀₁: Academic Self-efficacy has no significant predictive power on academic resilience of secondary school students.

H₀₂: Gender does not significantly moderate the predictive power of academic self-efficacy on academic resilience of secondary school students.

Method

Design of the Study

The research adopted a correlation research design. Correlation design is considered appropriate for this study because, the study sought to investigate the predictive power of students' academic self-efficacy on their academic resilience.

Population of the Study

The population of the study comprised of all the 4, 864 junior secondary two (JS2) students in Nsukka Education Zone of Enugu state.

Sample and Sampling Techniques

The sample of the study comprised 1320 junior secondary two (SSII) (637 males and 683 females) students who were drawn through multi-stage sampling techniques, from 10 public coeducational secondary schools in Nsukka Education Zone. Initially, the researcher stratified the secondary schools into single sex and coeducational schools. Out of the coeducational secondary schools in the Education zone, simple random sampling technique was used to draw 10 schools through balloting without replacement. In each sampled school, the researchers further sampled all the JSSII students through purposive sampling procedure. Purposive sampling technique was considered appropriate here because, JSSII students are the group that are not new in the secondary school like JSSI who are still adapting to learning environment in secondary school. Also, they still have a long way to go before completion of secondary school and this could contribute to their vulnerability to poor resilience in secondary school.

Instrument for Data Collection;

Two instruments were developed and used for the study; they are Academic Risk and Resilience scale (ARRS) (Martin, 2013) and General Academic Self-efficacy Scale (GASES).

Academic Risk and Resilience scale (ARR) was meant to obtain information about the students' academic resilience. The instrument is a 30 item questionnaire with four point scale of strongly agreed, Agreed, Disagreed and Strongly disagreed adopted from Martin (2013). The instrument is a standardized instrument made up of three subscales including the aspects of resilience (Cassidy, 2016) with reliability coefficient of 0.90. The Resilience Scale assessed student responses on five subscales of individual characteristics and seven subscales of protective factors. The individual characteristics consist of: (1) communication and cooperation; (2) self-esteem; (3) empathy; (4) help seeking behaviour, (5) goals and aspirations (for details of the items see appendix 1). Protective factors were measured using seven subscales including perceptions of (1) family support, (2) school support, (3) community support, (4) autonomy experience, (5) prosocial relationship with peers, (6) meaningful participation in extra-curricular activities, and (7) peer support. The protective factors assess children's perceptions about support from adults and peers at home, school and in the community, their autonomy experience, and the extent of their meaningful participation in social activity. Examples of the items in relation to the subscales of protective factors included: "adults at home are interested in my (the student's) school work"; "(they) believe that I will be a success". Examples of the items in relation to Peer Support included: "Are there students at your school who would: choose you on their team at school", "...tell you you're good at doing things".

General Academic Self-efficacy Scale (GASES) was meant to be completed by participants. The instrument was adopted from the General Academic Self Efficacy Scale by Abdul and Ashraf (2006). The scale consists of 40 items of statements structured on a four points rating scale ranging from 1= exactly true, 2=Nearly true, 3=Nearly False and 4= Exactly false. The instrument is a standardized

one with internal consistency 0.85 (N=30). The researchers re-administered the instrument to 30 JSSII students to assess the reliability of the instrument in Nigerian context. Data from the 30 students were subjected to chrombach alpha method of reliability testing which gave internal consistency of 0.89. This shows that the instrument is also reliable and fit for use in Nigeria context.

Method of Data Collection

The researcher with the help of three research assistants administered to the Students, the Academic Resilience scale and General Academic self-efficacy scale. The researcher with the research assistant visited each of the 10 sampled schools in different days during break period. The students were required to sit back in their classes for 30 minutes to respond to the scales. Thereafter, the researchers with the help of the research assistants retrieved all the questionnaires administered on each spot.

Method of data Analysis

Data collected for the study were analyzed using regression statistics to answer research questions and regression analysis to test hypotheses at 0.05 alpha levels.

Results

The results of this study were presented according to research questions and hypotheses that guided this study.

Research question 1

What is predictive power of students academic self-efficacy on their academic resilience?

Table 1: Pearson Product Moment Correlation Coefficient (r), showing Relationship between Academic self-efficacy and academic resilience of students.

Variables		Self-efficacy	Resilience
Self-efficacy	r	1	.63
Resilience	r	.63	1

Data in the table 1 show a high positive relationship between the students' academic self-efficacy and resilience (.63). This shows that students who had high scores in self-efficacy also exhibit high resilience. Hypothesis 1 further addressed this research question.

Hypothesis 1: Academic self-efficacy does not significantly predict the academic resilience of secondary school students.

Table 2: Regression Table Showing the Predictive Power of Self-Efficacy on Resilience

Model	Variable	B	Std. Error	β	T	P
1	Self-efficacy	1.61	.14	.63	7.34	<.000

a. Dependent Variable: Resilience

Data in table 2 showed that students’ academic self-efficacy significantly predicted their academic resilience. Result showed a positively predictive power of students’ academic self-efficacy on their academic resilience (B=1.61, β = .6, t=7.34 and p=.000). The unstandardized beta (B) =1.61 implies that for every unit increase in self-efficacy, resilience increases by 1.61. The standardized beta β = .63 shows a high correlation between self- efficacy and academic resilience of students and the strength of prediction is shown by p=.000, showing a highly significant positive prediction. Therefore the null hypothesis is rejected and the alternative accepted. Thus, academic self-efficacy significantly predicted students’ academic resilience.

Research question 2

What moderating influence of gender on the predictive influence of self-efficacy and academic resilience of secondary school students?

Table 3: Pearson Product Moment Correlation Coefficient (r), showing Partial correlation between students academic self-efficacy and academic resilience when controlling for gender.

Model	Control	Variable		Self-efficacy	Resilience	Gender
1	None	Self-efficacy	r	1	.63	-.01
		Resilience	r	.63	1	-.2
		Gender	r	-.21	-.02	1
2	Gender	Self-efficacy	r	1	.60	
		Resilience	r	.60	1	

Data in the table 2 model 1 show a positive relationship between the students’ self-efficacy and their resilience as is indicated by calculated r of .63. This indicated that students who had high scores in self-efficacy (those with high self-efficacy) had high resilience. Considering gender, there was of a negative predictive influence on self-efficacy (r= -.21) and a very low negative predictive influence on resilience (r = -.02). This means that gender difference between males and females can lead to decrease in self efficacy more than in resilience. However, controlling for gender in model 2 decreased the correlation between academic self-efficacy and academic resilience from .63 to -.60. Hypothesis 2 further addressed this research question:

Hypothesis 2

Gender does not significantly moderate the predictive influence of academic self-efficacy on academic resilience of secondary school students.

Table 4: Regression table showing predictive power of self-efficacy on academic resilience when controlling for students' gender

Model	Control	Variable	B	Std. Error	β	t	P
1	None	Self-efficacy	.61	.14	.63	7.34	<.000
		Gender	-.03	-.01	-.02	4.22	.531
2	Gender	Self-efficacy	.59	.25	.62	6.69	.000

a. Dependent Variable: Resilience

Data in table 2 revealed that academic self-efficacy had a significant predictive power on academic resilience ($B=.61$, $\beta=.63$, $t=7.34$, $p=.000$) while gender as a variable had non significant negative correlation with students' academic resilience ($B=-.03$, $\beta=-.02$, $t=4.22$, $p=.531$). On the other hand, controlling for the influence of gender, self-efficacy still had significant predictive power on students' academic resilience ($B=.59$, $\beta=.62$, $t=6.69$, $p=.000$). This means that self-efficacy can positively and significantly predict students' academic resilience, while gender had a non significant negative predictive power on students' academic resilience. In order to find out the moderating influence of gender on the correlation of academic self-efficacy and resilience, we controlled for gender in model 2 of table 4. Result showed that controlling for gender, the predictive influence of self-efficacy on resilience though reduced was still significant ($B=.59$, $\beta=.62$, $t=6.69$, $p=.000$). This implies that irrespective of gender, academic self-efficacy significantly and positively predicted academic resilience, suggesting that academic self-efficacy predicts academic resilience of both male and female students.

Discussion of Findings

Result of the current study revealed that there is positive relationship between students' academic self-efficacy and their academic resilience with academic self efficacy having significant predictive power on academic resilience. This finding concurs with previous finding (Cassidy, 2015; Martin & Marsh, 2006; George, 2008) who found positive correlation between academic self-efficacy and resilience. This means that students' belief about their capabilities in organizing and conducting activities to manage academic conditions (academic self-efficacy) has impact in their endurance, persistence and stability over problematic and stressful assignments and expectations in academic affairs (academic resilience) (Gu & Day, 2007). Thus a high sense of self-efficacy in academic affairs is necessary for students to make constructive and functional effort to stand against defeat and failure; increase their endurance and stability and put them in a stable lane toward their long term academic goal achievement. A strong sense of self-efficacy equips the students with confidence for problem-solving which helps them overcome academic problems that threaten their

course completion (Miller, Oshbhr, Thomalla, Bharwani, Zievogel, Walker, Birkmann, Vander leeuw, Rockstrom, Hinkel, Downing, Folk & Nelson, 2010). Such features are indicative of students' resilience.

When faced with problematic academic experiences, resilient students organize activities in order to solve the problem and look for appropriate solutions. They do not get into undesirable or negative interpretations that could get them demoralized (Bandura, Barbaranelli, Capara, & Pastorelli, 1996), rather, they gather intrinsic motivation through their sense of efficacy to be resilient in the face of all odds. The role of self-efficacy in overcoming educational challenges has also been widely explored by researcher, indicating that self efficacy is a source of motivation and self-regulatory strategies necessary for students academic resilience (Schwartz, Stein, Wald, Sha & Sonti, 2011; Shokri, Toulabi, Ghanaei, Taghveaeinia, Kakabaraei, 2012).

Further the current study found that gender had a negative correlation with self-efficacy. This is consistent with the previous findings (Hang, (2013; Web-Williams, 2014) who found that academic self-efficacy of students differ by gender. This implies that gender as a variable can introduce differences in students' self-efficacy about how well they can handle academic tasks and challenges arising therein. Some studies (Joet, Usher & Bresoux, 2011) indicate no gender difference in students' academic self-efficacy, suggesting that gender does not on its own impose differences in students' sense of capabilities in academic situations.

Academic resilience was also found to have no significant relationship with students' academic resilience. The result concurs with some earlier researches identifying gender as a factor in students' resilience (Mwangi & Ireri, 2017, Sun & Stewart, 2007). This implies that the mere fact that one is a male or female does not make him/her more resilient. Research studies have consistently found that resilience can change across time and context (Tudor & Spray, 2017). This serves as indication that no biological factor such as gender could account for how individuals differ in their approaches to challenges and adversities in academic environment.

Another important finding of the study is that of the moderating influence of gender on the relationship between students' academic self-efficacy and resilience. The present study found that controlling the influence of gender did not introduce significant difference in the relationship between the two variables. Thus the relationship between academic self-efficacy and resilience remained significant irrespective of gender.

Conclusion

- The following conclusions were made: Students with high self-efficacy also high resilience in academic situations, such that academic self-efficacy significantly predicts academic resilience, therefore, self-efficacy positively predicts academic resilience.
- Gender is a significant factor in academic self-efficacy but a non significant factor in academic resilience. Gender does not significantly moderate the relationship between students' academic self-efficacy and academic

resilience. So students' academic self-efficacy positively predicts their resilience irrespective of students' gender.

Recommendation

Based on the above conclusions of the study, it was recommended that: Attempts should be made by teachers and other education stakeholders to build and sustain a strong sense of self-efficacy in students in order to improve resilience among secondary school students. This can be done by clarifying the presenting tasks in such a way that will enable students experience a quantum of success enough to boost their self-efficacy.

Both males and female students should be encouraged to develop high sense of self-efficacy in academic settings for successful course completion. This will help to reduce attrition among secondary school students.

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