

Academic Self-Efficacy as a Determinant of the Need for Cognition, Parental Involvement, and Extraversion among Secondary School Students in Oyo State, Nigeria

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Abstract

This study investigated the need for cognition, parental involvement, and extraversion as factors determining academic self-efficacy among secondary school students in Oyo State, Nigeria. It adopted a correlational type of the descriptive research design. The study used a total sample of 300 secondary school students who were chosen based on a multistage sampling technique. Data were collected by means of a questionnaire focusing on the following variables (Need for Cognition $r=0.84$; Parental Involvement $r=0.83$; Extraversion $r=0.86$; and Self-Efficacy $r=0.87$). Data were analysed using Pearson Product Moment Correlation Coefficient and Multiple Regression. The results revealed that the need for cognition ($r=.804$), and parental involvement ($r=.788$) had a strong positive correlation with academic self-efficacy while extraversion had a weak correlation with academic self-efficacy ($r=-.203$). Parental involvement was the most potent out of the predictor variables ($\beta=.478$), followed by the need for cognition ($\beta=.365$). Extraversion made a negative contribution to the predictor of academic self-efficacy ($\beta=-.245$). Regression analysis revealed that the three independent variables (need for cognition, parental involvement, and extraversion) jointly accounted for 55.2% (Adjusted $R^2=.552$) variation in the prediction of self-efficacy. The study recommends that school counsellors should counsel students on the need to develop higher academic self-efficacy in order to bring about excellent results in their academics.

Keywords: need for cognition, parental involvement, extraversion, academic self-efficacy

Introduction

Self-efficacy refers to one's belief in one's ability to succeed, particularly in certain situations or in the completion of specific activities. Self-efficacy is the most important determinant of academic performance at all levels of school. It is a learner's belief in his or her ability to carry out the behaviours required to achieve certain performance goals (Bandura, 1997). Bandura (1997) defines self-

efficacy as a person's belief in his or her capacity to perform properly in a given situation. This belief may or may not correctly reflect a person's ability. We judge achievement in educational settings in terms of academic success, such as when students pass a course. A gifted student with the ability to excel academically may have poor self-efficacy lowering his or her chances of academic success (Bandura, 1997). Bahmanabadi & Baluchzade (2013) define self-efficacy as a person's belief in their ability to influence their behaviour, motivation, and social environment. Through its influence on cognitive, emotional, and motivational intervening processes, self-efficacy can increase or degrade performance. As a result, the importance of self-efficacy in learning should not be overlooked. Bouffard-Bouchard et al. (1991) found that self-efficacy and cognitive abilities are independent of one another, and that self-efficacy influenced the learning environment for school-aged students and more self-efficacious students were able to perform at higher levels than those who were less self-efficacious, regardless of cognitive abilities.

The inclination for an individual to engage in and enjoy effortful cognitive endeavours is known as the need for cognition (NFC) (Cacioppo et al. 1996). Individuals with high NFC are more likely to try to make sense of (difficult) information on their own, actively acquire information, and think about and reflect on things, whereas those with low NFC are more likely to rely on others or external cues to provide information and the structure to make sense of it. The level of organisation provided in the secondary school and university learning environments is a significant difference. Students at university are supposed to be self-directed learners who manage their studies and tackle tough material. As a result, high NFC students may be more confident in their abilities to work independently and in their capacity to succeed in studies. Students' academic self-efficacy beliefs improve as a result of NFC (Elias & Loomis, 2002). Academic self-efficacy can be defined as a student's confidence that he or she can succeed at specific tasks, such as memorizing pieces of knowledge from academic textbooks for a test or composing an essay to respond to a research question. This notion is generalised, in the sense that it is not tied to any particular field of study, and it can be used in a variety of school programmes. As a result, we used NFC as a personality trait that has a direct impact on academic self-efficacy.

Another key component that promotes students' academic self-efficacy is parental involvement. The home is the primary point of contact for students who want to improve their grades. Parents and other critical family members provide the student with early education and socialisation. Any student's first teacher is his or her parent (Adeyemo, 2007). The family provides the educational environment, and it is important to consider how the home and school interact to help students acquire academic self-efficacy and success. Students who have their parents involved in their schooling perform better academically and are less likely to drop

out (Adeyemo, 2007; Ajadi & Ademola, 2021).

Extraversion is the final variable in this study. Extraversion has long been considered one of the most important aspects of human nature. The Big five personality traits assessed by McCrae & Costa (1997) include Conscientiousness (C), Openness (O), Extraversion (E), Neuroticism (N), and Agreeableness (A). Extraversion has long been recognized as one of the highest order of human personality. Recently, educational psychologists, counselors and educational researchers alike have begun to show keen interest in the relationship between personality traits and students' academic self-efficacy, mostly to explain the level of students' academic self-efficacy based on the personality traits they possess (Oshokoya, & Omoteso, 2018). Rothpaut & Young (2007) also reported personality trait of extraversion having a more positive influence on intimacy self-efficacy than introversion personality trait.

Theoretical Framework

This study is guided by Bandura's Psychological Model of Behaviour, the Social Cognitive Theory (1977). The theory emphasizes that learning occurs in a social environment and mostly through observation. It was first established with an emphasis on the acquisition of social behaviours (Bandura, 1977). The idea has been used extensively by individuals interested in understanding classroom motivation, learning, and achievement in a variety of topics, including mental and physical health, career choice, athletics, organisational behaviour, and so on (Pajares, 1996). The on-going functioning of a person is the result of the constant interaction of cognitive, behavioural, and contextual elements. Factors in the academic environment, particularly reinforcements experienced by oneself and others, impact classroom learning (Bandura, 1977). Learning is mostly influenced by students' thoughts and self-perception, as well as their interactions with the classroom environment (Bandura, 2012).

Review of Related Literature

Various internal and external interacting factors influence self-efficacy beliefs, which are reflected in career-related outcome expectations and performance. Brown et al (1991) investigated ways of channelling self-efficacy beliefs toward good results that lead to the establishment and extension of career development studies that use contextual, problem-based, and community-based learning practices and encourage self-monitoring and assessment. Self-efficacy, on the other hand, has no bearing on students' professional ambitions. Brown et al. (1991) discovered that while both men and women tend to be overconfident when judging their level of confidence in their talents, undergraduate men were more overconfident, even when they were wrong. In his study, Adeyemi (2008) discovered a link between parental participation and academic self-efficacy, stating that a large impact of parental involvement on academic self-efficacy is best understood when it is

recognised that most parents have higher expectations for their children. Most parents want their children to succeed in life, and they will go to great lengths to ensure that they receive the necessary support that will give them the confidence to pursue their academic goals (Ajadi & Ademola, 2021). Academic self-efficacy was significantly positively correlated with authoritative parenting style, and it was a significant predictor of academic performance, according to Adeyemo & Adetona (2007), who studied the influence of parental involvement on academic self-efficacy of 264 undergraduates in Oyo State. Parents and caregivers provided experiences that have a varied impact on children's self-efficacy beginning in infancy. Self-efficacy is favourably influenced by home influences that help youngsters engage well with their environment (Bandura, 1977). The family is the primary source of self-efficacy, but the influences are reciprocal. Student's self-efficacy is aided by parents who provide an environment that encourages their curiosity and allows for mastery experiences. Children who engage in more exploratory activities as a result of their curiosity boost parental response.

Motlagh et al. (2011) thought that all students are equal, which is incorrect because different students should be recognised as having unique interests. Motivational orientations, cognitive-meta-cognitive skills, and resource management were investigated by Komarraju and Nadler (2013) to predict students' academic performance. Chowdhury & Shahabuddin (2011) explored how self-efficacy, motivation, and academic performance interact among students enrolled in an introductory marketing course in a private school in Bangladesh. The study demonstrated that there were statistically positive associations between self-efficacy and performance ($r = .289$), suggesting students with strong self-efficacy abilities did better than those with low self-efficacy. Academic self-efficacy, academic motivation, and academic self-concept are factors that influence secondary school student's academic achievement (Ogunmakin & Akomolafe, 2013). Neuroticism hurts academic performance and academic self-efficacy (Chamorro & Furnham, 2003). Extraversion is a personality attribute that has a positive impact on intimate self-efficacy compared to introversion (Rothpaut & Young, 2007). Honicke and Broadbent (2016) conducted a comprehensive review of the impact of self-efficacy on academic performance, incorporating research articles over the previous 12 years that focused on the relationship between academic self-efficacy and the academic performance of university students. Several researchers have found a positive association between the two primary characteristics of self-efficacy and academic success, according to the study.

Statement of the Problem

The appalling failure of students in public examinations is a serious concern in Nigeria's educational system. The West African Senior School Certificate Examination (WASSCE) results of the November/December over years were

recently termed as unsatisfactory and worrying by the Nigerian National Officer of the West African Examinations Council (WAEC). Many scholars have conducted various types of studies on factors that influence student achievement in senior secondary schools.. Based on previous research, little research has been done on the association between various characteristics, such as parental involvement, need for cognition, and extraversion, and students' academic self-efficacy. On this basis, the researcher intends to determine the impact of parental involvement, need for cognition, and extraversion on secondary school students' academic self-efficacy in Oyo State, Nigeria.

Purpose of the Study

The main purpose of this study was to examine the need for cognition, parental involvement and extraversion as determinants of students' academic self-efficacy among senior secondary schools in Oyo State, Nigeria. The objectives were to:

- i. investigate the relationship between the need for cognition, parental involvement, and extraversion on students' self-efficacy in senior secondary schools in Oyo State, Nigeria
- ii. determine the joint contribution of need for cognition, parental involvement, and extraversion on students' self-efficacy in senior secondary schools in Oyo State, Nigeria
- iii. examine the relative contribution of need for cognition, parental involvement, and extraversion on students' self-efficacy in senior secondary schools in Oyo State, Nigeria.

Research Questions

- i. What is the relationship between the independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students?
- ii. What is the joint contribution of the independent variable (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students?
- iii. What is the relative contribution of the independent variable (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students?

Methodology

Research Design

To establish the relationship between the research variables and the prediction weights of the independent factors on the fluctuation of the dependent variable, this study used a correlational design. This design was chosen it fits the present study which focuses on the relationships between variables.

The population and Sample

Sample and Sampling Techniques

The population of this study comprised all public secondary school students in Oyo State, Nigeria. A stratified sampling strategy was used to select thirty (30) students from each of the ten (10) secondary schools. A total of 300 students were chosen as part of the sample for this study.

Research Instruments

The study's participants were asked to fill out a questionnaire with pertinent information. The questionnaire was divided into five sections, each of which tapped information based on the variables of interest identified. It was divided into five sections: Section A: Respondent demographics; Section B: Need for Cognition Questionnaire ($r = 0.84$); Section C: Parental Involvement Questionnaire ($r = 0.83$); Section D: Extraversion Questionnaire ($r = 0.86$); and Section E: Self-Efficacy Questionnaire ($r = 0.87$). Data were analysed using Pearson Product Moment Correlation Coefficient and Multiple Linear Regression in the Statistical Package for Social Science (SPSS) to answer the three research questions.

Findings

Research Question 1: What is the relationship between the independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students? Data analysis employed a matrix of Pearson product-moment correlation coefficients, presented in Table 1 among the independent and dependent variables scores were calculated.

Table 1: *Descriptive Statistics and Inter-correlations among independent Variables and Students' Academic Self-Efficacy*

Variables	1	2	3	4
1.Academic Self-Efficacy	1.00			
2.Need for Cognition	.804**	1.00		
3.Parental Involvement	.788**	.658**	1.00	
4.Extraversion	-.203**	.022	.126*	1.00
Mean	44.35	40.55	56.32	27.43
SD	4.32	5.22	4.51	6.71

**Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (1-tailed)

Table 1 reveals the inter-correlation matrix between the independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students. Need for

cognitive ($r = .804, p < 0.01$) and parental involvement ($r = .788, p < 0.01$) positively and significantly correlated with academic self-efficacy, while extraversion was negatively correlated with academic self-efficacy ($r = -.203, p < 0.01$) among secondary school students. This implies that as independent variables (need for cognition, parental involvement, and extraversion) increase, the dependent variable (academic self-efficacy) also increases among the secondary school students.

Research Question 2: What is the joint contribution of independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students? Data for this question were analysed using regression analysis. The results are presented in Table 2.

Table 2: Regression Analysis showing Joint Contribution of the Variables on Students' Self-Efficacy

R = .754

R Square $R^2 = .560$

Adjusted R Square = .552

Standard Error of the Estimate = 2.877

Model	Sum of Square	Df	Mean Square	F	Sig.
1 Regression	2962.009	3	981.227	130.358	.000 ^b
Residual	2523.677	294	8.318		
Total	5485.686	297			

Table 2 reveals that the independent variables (need for cognition, parental involvement, and extraversion) together have a significant contribution to academic self-efficacy. The result yielded a coefficient regressions $R = .754$, multiple $R^2 = .560$ and Adjusted $R^2 = .552$. This implies that the need for cognition, parental involvement, and extraversion jointly accounted for 55.2% (Adjusted $R^2 = .552$). Table 2 also reveals that the need for cognition, parental involvement, and extraversion had a significant joint influence on academic self-efficacy among the secondary school students in Oyo State, Nigeria ($F_{(3,294)} = 130.358; P < .05$).

Research Question 3: What is the relative contribution of the independent variables (need for cognition, parental involvement, and extraversion) and the dependent variable (academic self-efficacy) among secondary school students? Data for this question were analysed using multiple regression analysis. The results are presented in Table 3.

Table 3: *Multiple Regression showing the Relative Contribution of each of the Variables*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta (β)		
1 (Constant)	28.445	3.112		3.866	.000
Need for Cognition	.121	.027	.365	4.455	.000
Parental Involvement	.389	.058	.478	7.851	.000
Extraversion	-.123	.022	-.245	-5.866	.000

Table 3 reveals the relative contribution of extraversion, need for cognition, and parental involvement to academic self-efficacy among secondary school students in Oyo State, Nigeria. The table also shows that 2 out of the 3 predictor variables (parental involvement and need for cognition) are potent predictors of academic self-efficacy. The most potent among the factors was parental involvement ($\beta = .478$; $t = 7.851$; $p < .05$), followed by need for cognition ($\beta = .365$; $t = 4.455$; $p < .05$). Extraversion ($\beta = -.245$; $t = -5.866$; $p < .05$) made negative contribution to the prediction of academic self-efficacy. This implies high academic self-efficacy is evidence of parental involvement and need for cognition.

Discussion of Findings

The association between the dependent variable (academic self-efficacy) and the independent variables (need for cognition, parental participation, and extraversion) among secondary school students has been examined. Academic self-efficacy has a significant relationship with the need for cognition and parental participation while extraversion has no relationship with academic self-efficacy, according to the findings. This means that as students' academic self-efficacy grows, so does their demand for cognition and parental participation. This finding also shows that parental involvement in a student's development helps the student's academic self-efficacy. This agrees with Omoteso (2010), who found that parental participation boosts students' academic self-efficacy, which is critical for academic achievement.

The findings demonstrated that independent variables (need for cognition, parental involvement, and extraversion) all have an impact on the dependent variable (academic self-efficacy). It demonstrates that when the independent variables (need for cognition, parental participation, and extraversion) are combined, they account for 55.2% of the variance in secondary school students' academic self-efficacy. This finding supports the necessity for students' academic self-efficacy to be predicted

by cognition toward school and learning, parental participation in their academics, and extraversion. The data also show that parents have an impact on their student's academic self-efficacy. The results support the findings of Akinfe, Olofinniyi, and Fashiku (2012), who observed that parental participation boosts academic self-efficacy. According to Carr (2013), parental participation has a considerable impact on students' academic self-efficacy. The findings of this study revealed that there was no link between extraversion and academic efficacy in students. This means that whether a student is an extrovert or an introvert has no bearing on their academic self-efficacy; also, the level of academic self-efficacy cannot be described only based on a student's personality attribute. Students who fall into the extraversion domain of personality may be more enthusiastic about their studies than students who fall into the introversion type. This is in keeping with Aremu (2009), who found no link between extraversion and academic self-efficacy in students.

The proportional impact of the independent factors (need for cognition, parental involvement, and extraversion) on the dependent variable (academic self-efficacy) has also been revealed, confirming that parental involvement and need for cognition predict academic self-efficacy better than extraversion. Parental involvement was the most powerful effect, followed by the demand for cognition, and finally, extraversion had only a negative impact on students' academic self-efficacy. This means that parental involvement and the desire for cognition are signs of academic self-efficacy. Academic self-efficacy is higher among students whose parents are involved in their education.

Conclusion

The impact of the need for cognition, parental involvement, and extraversion on students' academic self-efficacy in Oyo State was explored in this study. The results have revealed that academic self-efficacy has a positive relationship with the need for cognition, according to the data, and parental participation increased students' academic self-efficacy. Similarly, the combination of the demand for cognition, parental involvement, and extraversion was found to be relevant in the prediction of secondary school students' academic self-efficacy. Parental involvement was the most powerful predictor, followed by the demand for cognition, and finally, extraversion contributed only negatively to the prediction of students' academic self-efficacy.

Recommendations

Based on the findings of the study, the following are recommended:

- i. Teachers and school counsellors should endeavour to incorporate moral talks into classroom teaching in order to promote good behaviour in the students that might go a long way in developing positive attitude in students.

- ii. Teachers should avoid passing wrong comments and undue criticisms on students' academic performance openly, as this can kill the morale of the students and eventually lead to lack of confidence in students' abilities.
- iii. School counsellors should counsel students (during extra-curricular activities) on the needs to develop higher academic self-efficacy other than just stopping at the moderate level, to bring about academic excellent results and help them in life time.
- iv. Parents should ensure their children are given adequate support to enhance their academic achievement and not academic failure.

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