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RESEARCH ARTICLE

ROLE OF ACADEMIC SELF-EFFICACY ON ATTITUDE TOWARDS RESEARCH ACTIVITIES AMONG NIGERIAN UNDERGRADUATES

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Abstract

Research is a ubiquitous part of education at the tertiary level across the globe. Research is fundamental in the advancement and improvement of every aspect of our world. The demand for students' participation in research activities has increasingly been adopted in many tertiary institutions in Nigeria. Therefore, this study aims to determine attitude towards research activities among Nigeria's undergraduates based on academic self-efficacy. A cross-sectional survey design was adopted. The study population comprised students from two public tertiary institutions in Nigeria (Kogi State University and Benue State University). One hundred and twenty-seven undergraduates ($n=127$) comprising males and females were randomly selected to participate in the study. The participants completed self-report measures, including a self-developed instrument designed to ascertain student's attitudes towards research activities and the College Academic Self-Efficacy Scale (CASES). Linear regression analysis was conducted to determine the variation in attitude towards research activity based on student's academic self-efficacy. The investigation revealed that academic self-efficacy statistically significantly predicted attitude towards research activity at $F(1,125) = 60.035, P < .000$. With adjusted R^2 , the predictor variable accounted for 22.2% of the variance in attitude towards research activity. The study concluded that academic self-efficacy is a significant predictor of attitude towards research activities.

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Introduction:-

An essential requirement for higher education in recent years is student research activities (Kachalova et al., 2019). Presently, the school system, especially at the university level, focuses on research design and development. The necessity to establish a coherent research framework and inquiry skills is increasingly crucial for a nation's development (Ashrafi-Rizi et al., 2015). The development and integration of evidence-based knowledge are globally recognized as essential in modern-day science education (Bhagavathula et al., 2017). Research is critical in the advancement and improvement of every aspect of our world. Scholars have justified the need to organize research activities for students (Sabel'nikova-Begashvili & Khudoverdova, 2020) and the need for consistent mastery of research competencies (Krylova et al., 2019). Indeed, research indicates that students who had research experience are more eager to engage in future inquiries (McLaughlin et al., 2018; Mina et al., 2016; Partido & Colón, 2019). Research and design activities are often crucial in achieving the objective of STEM (Science, Technology, Engineering & Mathematics) education (Vossen et al., 2018). Hajdarpasic et al. (2015) argued that research activities

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promote higher education and effectively increases the value of education to the student. Undergraduate research and creative activities provide students with advanced knowledge (Davis & Jones, 2017). Enhance student's understanding of basic scientific knowledge and the research process (Brown et al., 2016), and increase intellectual stimulation (Falconer & Holcomb, 2008).

Several authors have emphasized the relevance of promoting student's research activities (Abu-helalah et al., 2015; Beanland et al., 2020; Borakati et al., 2017; Kozlov et al., 2017; Noguez & Neri, 2019; Razeghi, 2019; Roach, 2017; Swan et al., 2018; Weiner & Watkinson, 2014). Although, the need to support student's participation in research activities has been established. However, research has associated engagement in research activities with certain barriers (Kumar et al., 2019; Nguyen et al., 2020; Weiner & Watkinson, 2014). For instance, (Salgueira et al., 2012) established a link between GPA, gender, personality characteristics, and student involvement in undergraduate scientific research activities.

In Nigeria's tertiary education system, research is among the primary requirement for graduation. Recently, the government and education institutions have geared efforts in encouraging and promoting research activities for the students, however, despite the relevance of research to the students, institution, and society in general. The attitude and perception of many students in tertiary research institutions in Nigeria have been observed to be unfavorable (Chiemeké et al., 2009; Olatubosun et al., 2014). Thereby negatively impacting the development of the nation. However, the current study attempts to determine the effect of academic self-efficacy on student's research activity.

Self-efficacy represents one of the socio-psychological constructs denoting an individual's belief in achieving a task by oneself (Bandura, 1977). Self-efficacy plays a vital role in student's success. Self-efficacy has been shown to influence student participation, determination, achievement, and career choice (Webb-Williams, 2018). Academic self-efficacy refers to a student's belief in effectively achieving a designated educational goal by own self. Evidence has linked academic self-efficacy to intellectual engagement and performance (Honick & Broadbent, 2016; Liu et al., 2020; Ogunmakin & Akomolafe, 2013; Onu et al., 2021; Ugwu et al., 2013).

One's attitude informs one's behavioral intention, and consequently, can positively or negatively influence one's behavior (Fishbein & Ajzen, 2005). For example, it is observed that while most students engage in undergraduate research works effectively. Others perceive the undergraduate research as irrelevant, boring, too complex, and disconnected from their expectations and objective. In other words, a student's attitude towards research determines the level of the student's participation in research activities in school, and one's academic self-efficacy could moderate this attitude. The purpose of this current study is to examine the variance in an attitude towards research activities based on academic self-efficacy. Thus, we hypothesized that academic self-efficacy would significantly influence undergraduate attitudes towards research activities.

Method:-

In this study, we adopted a cross-sectional survey design. The study population comprised students from two public tertiary institutions in Nigeria (Kogi State University and Benue State University). A total of one hundred and twenty-seven students comprising males and females (n=127), were randomly selected as participants for the study. The participants were mainly drawn from the classrooms and school hostels.

Measure:-

Attitude towards research activity was measured using a self-developed instrument following a review of relevant literature. The 10-item Linkert type instrument is scored in a 5-point response format with high scores indicating a positive attitude. The reliability of the scale was obtained following a pilot study. Observation of the Cronbach's alpha coefficients revealed acceptable levels of internal consistency reliabilities of the instrument, which exceeded the cutoff rules-of-the thumb of .70 as recommended for study purposes (Kaplan & Saccuzzo, 2013).

Academic self-efficacy was assessed using the College Academic Self-Efficacy Scale (CASES) initially developed by (Owen & Froman, 1988). The scale measures student's confidence in their ability to complete the academic-related tasks associated with success. The scale was adapted and modified for this study. The revised scale contains a five-point Likert-type scale measuring degrees of confidence. Higher scores indicate higher college academic self-efficacy. The Cronbach alpha .78 coefficient was obtained in the scale.

Result:-

To test the hypothesis that academic self-efficacy would significantly influence undergraduate's attitude towards research activities. Linear regression analysis was conducted to determine the variation in attitude towards research activity based on student's academic self-efficacy. The investigation revealed that academic self-efficacy statistically significantly predicted attitude towards research activity at $F(1,125)$, 60.035, $P < .000$. With adjusted R^2 indicating that the predictor variable accounted for 22.2% of the observed variance in attitude towards research activity.

Table 1:- Multiple regression results for attitude towards research activity.

	B	95% CI for B		SEB	β	R^2	t	Sig
		LL	UL					
Model								
Constant	2.347	2.084	2.610	.133			17.588	.000
Discipline	-.476	-.596	-.396	.061	-.476	.222	-7.830	.000

Note. B = Unstandardized regression coefficient; CI = Confident Interval; LL = Lower Limit; UL = Upper Limit; SEB = Standardized error of the coefficient; β = Standardized coefficient; R^2 = Coefficient of determination. * $P < .000$.

Discussion:-

The present study aimed to assess the predictive effect of academic self-efficacy on undergraduate attitudes towards research activities. The study's findings showed that academic self-efficacy statistically significantly predicted attitude towards research activities at $F(1,125)$, 60.035, $P < .000$. With adjusted R^2 indicating that academic self-efficacy accounted for 22.2% of the observed variance in research activity attitude. The result suggests that students who scored high in academic self-efficacy are more likely to participate in research developments than their counterparts with low academic self-efficacy. The probable explanation for the result could be attributed to the idea that students with high self-efficacy choose complex and challenging tasks, while those with low self-efficacy attempt to avoid complex academic works. Hayat et al. (2020) stated that self-efficacy is one of the most critical factors in students' academic success. Previous studies have associated academic self-efficacy with motivation, learning performance, and interest (Doménech-Betoret et al., 2017; Ferla et al., 2009; Putwain et al., 2013; Sadi & Uyar, 2013; Villavicencio & Bernardo, 2013). Thus, academic self-efficacy is an indispensable factor in research attitude and motivation.

Conclusion:-

The present study aimed to determine the undergraduate's attitude towards research activities based on academic self-efficacy. It is concluded that students' academic self-efficacy is a significant predictor of students' attitudes towards research activities. This revelation is crucial in academia. A better understanding of determinants of student's attitudes towards research activities would be relevant to educators and the improvement of tertiary institutions' research status. It is implied that research attitudes of undergraduates would increase by boosting student's academic self-efficacy. Thus, the study recommends that actions capable of enhancing academic self-efficacy be instituted in tertiary institutions.

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