

 <p>ISSN NO. 2320-5407</p>	<p>Journal Homepage: -www.journalijar.com</p> <h2>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</h2> <p>Article DOI:10.21474/IJAR01/12846 DOI URL: http://dx.doi.org/10.21474/IJAR01/12846</p>	 <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407 Journal Homepage: http://www.journalijar.com Journal DOI:10.21474/IJAR01</p>
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RESEARCH ARTICLE

A STUDY OF PARENTAL ATTITUDE TOWARDS MATHEMATICS EDUCATION AND STUDENT'S MATH HOMEWORK BEHAVIOR

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Manuscript Info

Manuscript History

Received: 15 March 2021
Final Accepted: 19 April 2021
Published: May 2021

Key words: -

Homework, Parents, Attitudes,
Mathematics, Students

Abstract

Homework is an essential component of teaching used by teachers to enhance levels of student's commitment and engagement in learning. However, parental attitude is crucial in the homework and engagement behavior of the children. The present study investigates parental attitude towards mathematics and how it affects student's math homework behavior. Ninety-six parents participated in the study. They completed a Parents Attitude Towards Mathematics scale and the Mathematics Homework Behavior Scale (MHBS). The result found that parent's attitudes towards mathematics predicted math homework behavior. It is concluded that parental attitude towards mathematics is essential in increasing student's math homework behavior.

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Introduction: -

Undoubtedly, mathematics has proved to be the bedrock of the education system of any nation in terms of science and technological advancement (Etuk & Bello, 2016; Festus, 2014; Josiah & Olubunmi Adejoke, 2014; Musa & Dauda, 2014). Mathematics plays a vital role in achieving the Sustainable Development Goals (Lafuente-Lechuga et al., 2020) and moving society forward (The Education Committee, 2021). Mathematical skill has been identified as one of the critical competence necessary for employability in modern society. It is fundamental for many professions, especially science, technology, and engineering (Li & Schoenfeld, 2019), and an essential tool in everyday life. Accomplishment in mathematics is inextricably linked to future career opportunities (Hemmings et al., 2011). Proficiency in mathematics is a significant advantage in industrialized nations (Maloney et al., 2013). Mathematics provides students with the opportunity to describe, analyze and change their world. Scholars have emphasized the importance of mathematics (Akinoso, 2018; Andrews, 2007; Charles-Ogan, 2015; Kachapova, 2014; Kusmaryono, 2014; Lai et al., 2011; Obadara, 2012). Mathematics is compulsory at every level of education in Nigeria (Adebule & Ayoola, 2015; Ugodulunwa & Okolo, 2015). Mathematics occupied a central place in the school curriculum (Aguale & Usman, 2007). It is among the significantly required subject in transition into tertiary education in Nigeria. Unfortunately, teaching and learning mathematics remains a considerable concern for educators at the primary level (Adedeji, 2018).

Over the years, student's poor performance and math avoidance remain a significant challenge for education (Aburime, 2007; Agnes & Mathew, 2019; Dada & Akpan, 2019; Nwaocha, 2010; Owan, 2018; Salami & Okeke, 2017). Perhaps, this has resulted in the disparity between those who learn math with relative ease and those who struggle. In order to increase performance and enhance mathematical commitment, teachers augment classroom learning with homework. Homework creates a relationship between home and school and fosters progress in all

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aspects of school life (Nisar et al., 2020). Homework is an important activity to promote further development of mathematics skills learned in school. Research has emphasized school homework activities (Dettmers et al., 2019; Rosário et al., 2019; Valle et al., 2016; Zhou et al., 2020) and its relationship with academic achievement has been widely (Fernández-Alonso et al., 2019; Murillo & Martínez-Garrido, 2012; Núñez et al., 2015; Trautwein, 2007; Trost & Salehi-Isfahani, 2012). For instance, (Silinskas & Kikas, 2019) found an association between parental support in homework and student's increased task persistence during homework. Student's attitude towards homework predicts homework behavior and their commitment to completing homework task. There is a growing concern that school children do not always meet their mathematics homework or fail to invest sufficient effort in achieving them. The trend could have a devastating effect on mathematics performance if not controlled. Homework avoidance could be pervasive among students whose parents are not interested in mathematics. Thus, the present study is focused on identifying the motivational factors associated with school students' homework behavior. In this study, homework behavior refers to a student's commitment and ability to complete assignments.

Parental involvement in schoolwork activities is an essential factor in pupils' academic achievement (Simweleba & Serpell, 2020). Parental attitude towards mathematics could be a probable mediator to the relationship between their school children and math homework behavior. Attitude is a popular construct in social psychology that denotes an individual expression of like or dislike towards any aspect of their environment. In this study, attitude entails parent's positive or negative evaluation of mathematics and its consequent response to the subject. For example, parents with positive knowledge of mathematics tend to recognize the importance of mathematics education, thus, providing homework support to their wards. However, mathematically unexposed parents may become careless in their school children's mathematics homework activities. Parental support in school children's mathematics learning may enhance students' commitment toward mathematics (Sheldon & Epstein, 2005). Accordingly, (Wilkins & Ma, 2003) opined that parental involvement in after-school math activity influences positive mathematics interactions and attitude. However, parental attitudes and involvement with their kid's mathematics learning have received significant attention from scholars (Ampadu et al., 2017; Areepattamannil et al., 2015; Hemmings et al., 2011; Husen & Mansor, 2018; Mok, 2020; Soni & Kumari, 2015). Indeed, effective parent-child homework activity and parents' aspirations for their children's mathematics education have been beneficial for student achievement. The current study is aimed examine the differential impact of parental math attitude on their children's homework behavior. Thus, the primary objective of the study is to provide an answer to the following:

Would parents' positive or negative attitudes have any significant effect on their child's mathematics homework behavior?

Method: -

The current study is quantitative, and a cross-sectional survey design was adopted. The population of the survey includes parents whose children are in primary schools in Kogi State. Parents in this study include biological parents, guardians, or adoptive parents. A total of ninety-six parents participated in the study.

Measures: -

Parents' attitude towards mathematics was measured with a scale developed by the researchers and designed to ascertain parents' positive or negative belief, emotions, and responses towards mathematics. The ten items Likert form scale consists of 3 sub-dimensions. These sub-dimensions are: "Conceptual Understanding of mathematics, "Feelings of likes or dislikes," and "behavioral contributions. "The scale is graded in a four-point response format ranging from 'very little 'to 'very high.' The maximum score is 40, and the minimum score is 10. A higher score determines a positive attitude. The internal consistency coefficient of this scale was .86 in this research.

Children's math homework behavior was measured using the Mathematics Homework Behavior Scale (MHBS), designed to measure student's homework behavior. The scale initially developed by Özcan and Erktin (2013) was adapted and modified to suit the current context. The scale is a 15-item Linkert-type rating style with a five-point response format ranging from "Always (5), often (4), occasional (3), rarely (2), and never (1). The initial internal consistency coefficient of the scale was .91. However, .81 was recorded in this study.

Procedure

Parents were approached during morning school drops and after-school picks in some selected public and private primary schools in Kogi State of Nigeria between January and March 2021. Those who consented to partake in the

study were given the study instruments to fill at the spot. In all, ninety-six copies of the instrument were filled correctly and used for the research.

Result: -

Table 1: -Table showing the percentage score of parental attitudes towards mathematics.

	N	Percent
Negative attitude	45	46.9
Positive attitude	51	53.1
Total	96	100

The above table shows the percentage distribution of the parental attitude towards mathematics. The data indicates that 53.1% of the participants showed a positive attitude towards mathematics, while 46.9% of the participants displayed a negative attitude towards mathematics.

Table 2: -Table showing the result of the linear regression performed to determine the predictive role of parental attitude towards mathematics on student's homework behavior.

	B	Std. Error	Beta	R ²	t	Sig.
(Constant)	-1.527	.328			-4.650	.000
Math Homework Behavior	.566	.090	.546	.291	6.322	.000

A linear regression analysis was run to understand the effect of parental attitude towards mathematics on homework behavior. The investigation established that parental attitude could statistically significantly predict student's homework behavior, $F(1,94) = 39.963, P < .001$. Thus, our assumption that parental attitude would predict student's homework behavior was affirmed.

Discussion: -

The current study was conducted to determine whether parent's attitudes towards mathematics would predict their school children's homework behavior. A simple linear regression analysis indicates that parents' attitudes towards mathematics statistically significantly predicted students' homework behavior. This means that school children whose parents have a positive attitude towards mathematics are more likely to commit effort and complete their mathematical homework when compared to the students whose parents expressed a negative attitude towards mathematics. The result is consistent with literature showing that parental participation in children's learning is linked with higher levels of commitment in education (Cairney, 2000; Melhuish et al., 2008). Thus, the result further provides evidence that parents who perceive a subject as necessary contribute to higher academic performance, positive behavior, and emotional commitment. Although the importance of parental attitude to mathematics does not seem debatable, the level of the attitude determines to a more considerable extent how the child responds to activities relating the mathematics. A positive attitude strengthens the relationship between the children and mathematics homework behavior.

Limitations of the study

It is essential to note the probable limits of the present study. For instance, because the samples were self-selected, especially within the study parameter, the participants may have underrepresented the representative of the study population, including those with negative attitudes towards mathematics. Also, data about mathematics homework behavior was reported by the parents rather than the learners. This is a constraint in the sense that some parents may have been unwilling to report the actual mathematics homework behavior of their wards. Based on these inherent constraints, the generalization of the result may have been affected. Thus, future studies should reach larger samples across varying communities and a more comprehensive range of lifestyles. This is important because it could reveal a broader range of attitudes or barriers to homework engagement, which would be of importance to researchers, practitioners, and policymakers. It would be encouraging, in the future, to compare data from parental attitudes to actual learner's homework behavior.

Conclusion: -

It is widely recognized that parents and family's area critical part of children's education, and they are responsible for laying down the behavioral foundations relevant to learning and development. The present finding provides

evidence that a positive parental attitude towards mathematics benefits children's education, including their commitment to mathematics homework activities. The study contributes to the literature by revealing positive parental attitudes towards mathematics as scarcely variable that could enhance children's mathematics homework behavior.

Funding

The study was funded by the Tertiary Education Trust Fund (TetFund)

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