

# Influence of Teacher-Pupil Relationship on Primary School Pupils' Interest in Mathematics in Osun State, Nigeria

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## Abstract

Pupils' lack of interest in mathematics at tender ages in primary school has been observed to be one of the major causes of low performance in the subject as learners progress in the academic pursuit. Among other factors, Teacher-Pupil relationship remains one of the grey areas that require an in-depth examination to understand its influence on the pupils' interest in mathematics in Osun State primary schools. This study, therefore, investigated the influence of teacher-pupil relationship on pupils' interest in learning Mathematics, so as to enhance teachers' knowledge on strategies to adopt for improving pupils' academic achievement in mathematics. The study adopted a descriptive survey research design. A total of 100 pupils were randomly selected from both public and private primary schools in Ife Central Local Government Area. Data was collected using a validated questionnaire with a reliability coefficient of 0.82 determined through Cronbach's Alpha coefficient and analyzed using frequency count and regression analysis. The results showed that teacher-pupil relationship in Mathematics classroom is positive, that the interest of pupils in learning Mathematics is high and that there is a significant relationship between teacher-pupil relationship and pupils' interest in learning Mathematics in the study area. The study then concluded that positive teacher-pupil relationship is crucial to pupils' interest in learning Mathematics and recommended that teachers should continuously strengthen teacher-pupils relationship skills through trainings, pupil-centered pedagogies, regular mentorship and feedback systems.

**Keywords:** Teacher-pupil relationship/ teacher-pupils' bond, Pupils' interest, Primary school, Pupils/Learners, Mathematics classroom.

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## INTRODUCTION

Pupils' interest in learning has long been recognized as a central element in the educational process, influencing not only academic performance but also long-term intellectual and emotional development in young children (VanAswegen & Pendergast, 2023). It is the propelling force towards learning that gives learners the motivation to learn, engage in and with activities associated with particular subjects or topics. Interest enhances curiosity, knowledge acquisition, attention and persistence towards learning (Yan, *et al.*, 2025). It pushes pupils to invest time and effort in understanding new concepts, creatively explore new areas, and maintain persistence in the face of challenges (Tatiana *et al.*, 2022). Conversely, lack of interest results in passive learning, poor retention, and diminished achievement.

Pupils' interest in learning is not an innate trait but rather a construct that evolves through consistent

exposure to engaging and supportive educational experiences (Xin-Tang, *et al.*, 2022; vanAswegen & Pendergast, 2023; Mohamad, Madya & Nasri, 2025). This implies that interest in learning can grow, be developed and nurtured. When learning activities are connected to real-life situations and presented in ways that stimulate curiosity, pupils develop interest that originates from personal satisfaction rather than external rewards. This interest sustains pupils' attention and fosters deeper understanding of the learning content (Idowu, *et al.*, 2025).

When applied to mathematics, interest connotes a pupil's desire, motivation, and enjoyment in learning and applying mathematical concepts and skills to everyday activities. This implies that pupils with high interest in mathematics devote more effort, sustain concentration, and willingly engage in solving mathematical tasks. Thus, interest in relation to mathematics performance can be described as the degree

of enthusiasm, motivation, and positive attitude that pupils demonstrate towards mathematics, which directly influences their ability to concentrate, practice, understand, and ultimately achieve success in the subject.

Generally, mathematics is regarded as one of the most important subjects in the school curriculum because of its application to everyday activities in creativity and problem solving relating to all fields of accounting, engineering, science, information, communication technology (Chand *et al.*, 2021; Ryan, *et al.*, 2022; Perelah, *et al.*, 2023; Saha *et al.*, 2024; Nkeiru & Ezech, 2025). As one of the core subjects at the pre-primary, primary and post primary levels of education, learning starts at the formative stage of children's life because it develops young children critical thinking, strong quantitative reasoning and analytical skills required to succeed in school, multiple professions, and even daily life (Onoshakpokaiye, 2023; Kaku & Arthur, 2024; Nkeiru & Ezech, 2025; Sufa & Setiawan, 2025).

Mathematics is however attached with high difficulty level because it is mostly abstract and requires a high-level logical reasoning, concentration and consistent practice (Dahal, *et al.*, 2019; Waswa & Al-Kassab, 2023). As such, interest of the learners plays a significant role in achieving good success therefore, learners with little or no interest in the subject may have no headway in the subject (Chand *et al.*, 2021; Saha, *et al.*, 2024; Mohamad, *et al.*, 2025; Asare, *et al.*, 2026), but the interest can be developed by the teachers through patience, understanding, encouragement, and supportive atmosphere that values participation, acknowledges effort and empathy. Pupils develop confidence in tackling mathematical problems and are more likely to engage in the subject when they feel emotionally connected to the teacher (Asare, *et al.*, 2025). Therefore, the teacher's ability to connect with pupils emotionally and intellectually is one of the major decisive factors in stimulating and sustaining learning interest in mathematics (Yang, 2021; Kpotosu & Yarkwah, 2026).

The emotional and intellectual connection between the teacher and pupils known as teacher-pupil relationship is a subtle existence that must be nurtured through interaction, communication, and connection during teaching, guidance, support, and learning processes. It goes beyond instruction, it involves trust, respect, care, and collaboration, which influences how pupils feel, behave, and perform in their studies (Jederlund & von Rosen, 2023; Kpotosu & Yarkwah, 2026). It shapes how pupils feel about learning, how they perform academically, and how they behave in school. A strong teacher-pupil relationship builds trust, respect, and care, create a classroom environment void of harsh discipline, ridicule and indifference. It makes learners curious, participate actively and become open to learning (Van Bergen, *et al.*, 2023). The strength and quality of Teacher-Pupil relationship in mathematic classroom is

such that allow teachers to identify pupils' strengths and weaknesses, makes pupils willing to express ideas, ask questions, and explore complex concepts in the subject, encourages active engagement, which in turn deepens interest and enhances performance in the subject (Yang, 2021; Awoniyi & Butakor, 2023; Obikeze & Ezeanowai, 2025).

Based on the Attachment theory developed by John Bowlby (1969, 1980) and later expanded by Mary Ainsworth (1978) posited that special bond exists between children and their primary caregivers that children's early bond with caregivers shape their internal working models of self and others (Delsaux, 2024). This implies that, teacher-pupils bond (relationship) create a safe base for learning and relationship with others. It implies that, a positive teacher-pupil relationship at formative stages of learners' academic life creates a sense of security to study.

In the classroom, teachers often serve as attachment figures, creating either a secure or insecure base for pupils' academic engagement. This sense of security is particularly crucial in mathematics, a subject that many pupils perceive as difficult and anxiety inducing. When pupils trust that their teacher is approachable and responsive, they are more likely to ask questions, persist through challenging problems, and take intellectual risks. Consequently, secure attachment enhances motivation, self-confidence, and resilience, all of which can contribute to improved mathematics performance (Ansari, *et al.*, 2020). In this way, attachment theory underscores the transformative power of positive teacher-pupil relationships in bridging performance gaps in mathematics.

Studies however have observed that, there are regular occurrence of low performance in mathematics as learners progresses in the academic pursuit due lack of interest in the subject (Chand *et al.*, 2021; Saha *et al.*, 2024). Among other factors, Teacher-Pupil relationship remains one of the grey areas that require an in-depth examination to understand its influence on the pupils' interest in mathematics in Osun State primary schools and to curb the incessant low performance of learners in mathematics leading to shortage of science-oriented youths. This study therefore, was conducted to investigate the influence of teachers-pupils relationship on primary school pupils' interest in Mathematics in Osun State.

### Objectives

- i. Determines the nature of teacher-pupil relationship in Mathematics classroom among the pupils,
- ii. Ascertain primary school pupils' interest in learning Mathematics and
- iii. Investigate the influence of teacher-pupil relationship on pupils' interest in learning Mathematics in the study area.

## METHODOLOGY

The study adopted a descriptive survey design of correlation type. The population of this study consists of all primary school pupils in Osun State with a sample size of 100 pupils randomly selected through multi-stages sampling techniques. From the three senatorial districts in Osun State, one senatorial district (Osun East) was randomly selected, from the selected senatorial district, one Local Government Area (Atakunmosa West, LGA) was randomly selected for the study. From the LGA, 10 public primary schools were selected through simple randomly sampling technique, from the ten schools, 5 pupils each from primary three and four were purposively selected (they are mature to read and understand the content of the questionnaire independently) to participate in the study making a total of 10 pupils from each of the 10 primary schools making a total of 100 respondents for the study. A questionnaire namely; “Teacher-Pupil Relationship in Mathematics Classroom Questionnaire (TRMCQ)”, validated using Cronbach’s Alpha obtaining a Coefficient of 0.82 was used for data collection the instrument.

The data was collected with due permission from the school authority before contact with the respondents. A period of eight weeks was used for the data collection. The first week was for permission and introduction of the researcher and the assistances to the selected schools. Four weeks was used for interacting with the respondents and data collection, the other three weeks was used to collate and analyse the data collected. The data collected was analysed using frequency counts, percentages and regression analysis.

## RESULTS

**Research Question One:** What is the nature of teacher-pupil relationship in Mathematics classroom in Atakunmosa West Local Government Area?

Data gathered on fifteen items on the nature of teacher-pupil relationship were subjected to descriptive analysis of frequency and percentage statistical tools having summed up the responses of the respondents for each item based on “Not at All”, “Few Times” and “Every Time”. The results are presented in Table 1 below: Frequency = f and percentage= %

**Table 1: Descriptive analysis of the nature of Teacher-Pupil relationship of the respondents**

| S/N          | Nature of Relationship | Range | Frequency  | Percentage (%) |
|--------------|------------------------|-------|------------|----------------|
| 1            | Negative               | 14–20 | 0          | 0.0%           |
| 2            | Neutral                | 21–29 | 8          | 8.0%           |
| 3            | Positive               | 30–42 | 92         | 92.0%          |
| <b>Total</b> |                        |       | <b>100</b> | <b>100%</b>    |

Field Survey, 2025

The analysis of data on the nature of teacher-pupil relationships was grouped into three categories: Negative (Not at all), Neutral (Few Times) and Positive (Every Time). The distribution of responses showed that: 92% of respondents perceived the relationship as positive, 8% of respondents perceived it as Neutral, and 0% of respondents perceived it as Negative. This result indicated that the teacher-pupil relationship in the study area is positive.

**Research Question Two:** What is the interest of primary school pupils in learning Mathematics?

Data collected on the interest of the pupils’ interest in learning mathematics were subjected to descriptive analysis of frequency and percentage statistical tools having summed up the responses of the respondents for each item based on “Strongly Agree”, “Agree”, “Disagree” and “Strongly Disagree”. The results are presented in table 2 below:

**Table 2: Descriptive analysis of the interest of the pupils in learning Mathematics**

| S/N          | Pupils' Interest | Range | Frequency  | Percentage (%) |
|--------------|------------------|-------|------------|----------------|
| 1            | Low              | 11–21 | 6          | 6.0%           |
| 2            | Moderate         | 22–30 | 13         | 13.0%          |
| 3            | High             | 31–44 | 81         | 81.0%          |
| <b>Total</b> |                  |       | <b>100</b> | <b>100%</b>    |

Field Survey, 2025

The findings showed that majority of the respondents (81%) reported a high level of interest in Mathematics. A smaller proportion (13%) of respondents expressed moderate interest in learning Mathematics. This indicated that these category of pupils do not dislike the subject, but they are not fully enthusiastic about it. The 6% of respondents indicated a low interest in Mathematics. Though the percentage is small, this group

represents pupils who may find the subject difficult, intimidating, or less rewarding.

### Test of Hypothesis

**H<sub>01</sub>:** There is no significance influence of teacher-pupil relationship on pupils' interest in learning Mathematics Data on the items teacher-pupil relationship (independent variable) and that of pupils' interest

(dependent variable) were subjected to Regression statistical tool and the results were presented below:

**Table 3: Regression analysis of the relationship between teacher-pupil relationship and pupils' interest in learning Mathematics**

| Predictor                  | Unstandardized Coefficients (B) | Std. Error | Standardized Coefficients (Beta) | t    | Sig. (p-value) |
|----------------------------|---------------------------------|------------|----------------------------------|------|----------------|
| Constant                   | 1.372                           | 0.186      | –                                | 7.38 | 0.001          |
| Teacher–Pupil Relationship | 0.684                           | 0.069      | 0.612                            | 9.92 | 0.001          |

**Dependent Variable:** Pupils' interest in learning Mathematics

**Predator (Constant):** Teacher-pupil relationship

The correlation coefficient ( $R = 0.612$ ) indicated a significant strong positive relationship between teacher-pupil relationship and pupils' interest in Mathematics. The  $R^2$  value of 0.375 implies that approximately 37.5% of the variance in pupils' interest in Mathematics is explained by teacher-pupil relationship. The Table above showed that the constant (1.372) represents the predicted baseline of pupils' interest in Mathematics when teacher–pupil relationship is zero. The unstandardized coefficient ( $B = 0.684$ ) showed that for every one-unit increase in teacher–pupil relationship score, pupils' interest in Mathematics increases by 0.684 units. The standardized coefficient ( $Beta = 0.612$ ) indicated a strong positive influence, and the significance value ( $p < 0.001$ ) confirms that the effect is statistically significant.

## DISCUSSION OF RESULTS

Findings from the study that indicated that the nature of Teacher-Pupil Relationship is positive suggests that the teachers and pupils generally have a warm, supportive, and respectful interactions with the teachers in the classroom as pointed out by Bowlby theory of attachment (Delsaux, 2024). It also implies that the pupils experience supportive, respectful, and encouraging interactions with their teachers as described by Awoniyi and Bukator (2023). This suggests that teachers in the study area generally adopt practices that promote trust, open communication, and encouragement to the pupils in line with the thoughts of Yang, 2021; Obikeze & Ezeanowai, 2025; Mohamad, Madya & Nasri, (2025).

A positive teacher–pupil relationship has been widely documented as a strong predictor of improved classroom engagement, higher achievement, and better social adjustment. Such a classroom environment is known to enhance pupils' motivation, confidence, and interest in learning, especially in mathematics as posited by Jederlund & von Rosen, 2023; Kpotosu & Yarkwah, 2026). The small proportion of respondents (8%) who reported a moderate relationship implies that while some teacher–pupil interactions are fairly supportive, they may not fully provide the level of encouragement or consistency required to maximize pupils' learning

outcomes. This group represents an opportunity for teachers to further strengthen their connection with pupils by improving their communication styles, empathy, and instructional methods. It is noteworthy that no respondent (0%) reported a negative relationship.

Findings from the study also shows that a large proportion of pupils (eighty-one percent) expressed a high level of interest in Mathematics in the study area. This is an encouraging outcome, as interest is often a key predictor of motivation, persistence, and achievement in Mathematics as reflected in the study of Kaku & Arthur, (2024); Mohamad, Madya and Nasri, (2025). In line with this, Mtonga & Ndhlovu, (2024); Githaiga, *et al.*, (2025) submitted that pupils' attitudes and interest significantly influence their academic performance in mathematics and science. A high level of interest therefore implies that most pupils are motivated to engage with the subject and are likely to achieve better outcomes. The thirteen percent of pupils who reported a moderate interest in Mathematics reflect a group that is neither fully enthusiastic about the subject nor entirely disengaged. This indicates that while they may recognize the importance of Mathematics, they do not demonstrate the same level of passion or commitment as their peers with high interest. Teachers therefore need to pay special attention to this group with appropriate teaching methods, encouragement, and support to prevent further decline in their interest. Olatunji, (2025) posited that moderate engagement can limit academic growth if not nurtured. The six percent of pupils who reported a low interest in Mathematics, though a minority, are significant because lack of interest is a known contributor to poor performance in the subject as posited by Chand *et al.*, (2021); Saha *et al.*, (2024); Mohamad, *et al.*, (2025). John (2021) noted that pupils' negative attitudes and low motivation toward Mathematics are among the critical factors responsible for weak performance in Nigeria. Addressing the needs of these pupils is essential to prevent long-term disinterest and failure in the subject. Differentiated instructional strategies, motivational teaching approaches, and continuous teacher-pupil support are some the strategies that can be employed to ensure that all learners develop and sustain a strong interest in Mathematics.

The findings of this study also show a significant influence of teacher-pupil relationship on pupils' interest in Mathematics. The result is in line with the submission of Dahal, (2019); Awoniyi and Bukator,

(2021); Jung, *et al.*, (2021) and Asare, *et al.*, (2025), that teacher-student relationship influences students' interest and academic achievement in mathematics. This implies that pupils who are having positive relationship with their teachers showed a higher level of interest and improved performance in Mathematics compared to those with weaker teacher-pupil interactions. This suggests that relational dynamics between teachers and pupils extend beyond classroom management and discipline; they play a critical role in shaping pupils' attitudes towards Mathematics.

One of the major findings of this study is that pupils with supportive and approachable teachers demonstrated greater enthusiasm and motivation for Mathematics. Pupils in this category participated actively in class, engaged with problem-solving tasks, and displayed a higher degree of perseverance when faced with challenging mathematical concepts. This aligns with the observations of Yang, (2021); Awoniyi & Butakor, (2023); Ezinwa (2023); Obikeze & Ezeanowai, (2025), that strong teacher-pupil relationships foster a sense of belonging that enhances academic engagement, particularly in difficult subjects like Mathematics.

Another key finding indicates that pupils who felt neglected or experienced negative interactions with their teacher's developed anxiety and resistance towards Mathematics. They were less likely to attempt challenging problems and more prone to giving up easily. This outcome is consistent with the work of Kuril (2021), who found that negative teacher behaviors such as harsh criticism, impatience, or lack of encouragement reduced pupils' willingness to learn and negatively affected their long-term interest in Mathematics.

These findings further align with the studies of Adeyemi and Bamire, (2023); Iranda and Nuhu (2024) that pupils who perceived their teachers as approachable and encouraging demonstrated higher levels of engagement in learning and by extension mathematics. The regression result from this study therefore reinforces existing evidence that interpersonal aspects of teaching are critical to learners' academic interest.

## CONCLUSION

This study therefore concluded that, there is a positive teacher-pupils relationship in the study area, that the interest of the pupils in mathematics is very high as a result of cordial teacher-pupils' relationship and that there is a significant relationship between teacher-pupils' relationship and pupils' interest in mathematics in the study area.

## RECOMMENDATION

The study recommended that teachers should continually engage in activities, training and experiences that will improve pupils' interest in learning all subjects

especially at primary school level so as to build a strong foundation for future learning, confidence and competence in academic pursuit and achievements.

Thus, enhancing teacher-pupil relationships should be considered a strategic focus for schools, policymakers, and teacher training programs aiming to strengthen Mathematics learning outcomes in the classroom.

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