



## **Teacher Interpersonal Behaviour and Students' Academic Achievement:** A Conceptual Review

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#### **ABSTRACT**

This paper discusses the role of positive of teacher interpersonal behaviour in promoting inspiring learning outcomes, particularly academic achievement. It also describes teacher interpersonal behaviour as an embodiment of attributes displayed by teachers in learning environment. Students' perception of the behaviour was identified as a factor that makes or mars teacher-student relationship. It furthermore, indicates that positive relationship quite often influences and improves students' academic achievement. Similarly, the concept and model of teacher interpersonal behaviour were also elaborated to express points of teacher-student relationship in learning environment. Equally, the concept of academic achievement was explained via some empirical authentications. Subsequently, review of empirical studies on teacher interpersonal behaviour and academic achievement conducted in Nigeria and other continents of the world was presented. Consequently, it was concluded that positive teacher interpersonal behaviour is a sine qua non for positive learning outcome. Based on the preceding discourses, it is suggested that teachers should demonstrate positive manners that lure students to see importance of their subject contents for positive academic achievement.

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#### INTRODUCTION

In recent times, considerable attention is focused on the influence of teacher interpersonal behaviour in relation to students' learning outcomes. This effort is borne out of the fact that students in the present era experience abysmal achievement, particularly in senior secondary school examinations (SSCE). Even though cheerful achievement is the sine quo non for academic and employment opportunities, they have been slayed down due massive failure in SSCE (Ononye & Obiakor, 2020). Consequent to this negative trend, education stakeholders in the country point accusing finger at a spectrum of factors for being the probable cause of the phenomenon. A noticeable amongst them

according to Chikendu, (2022); Daily Post, (2019) is the incompetence of teachers to relate with students in a positive way in a learning environment, which consequently impacts on their learning outcomes. Arguably, the supposition of the stakeholders in this regard is well grounded in the fact that students perform excellently with one teacher and display oppositely with another. This disparity according to Gogo & Ihibo, 2020; Mustary, 2020; Reid (2007) calls for empirical investigation to unveil the root cause.

The repetitive students' underachievement in public examinations appears a challenging issue to all teachers, education administrators and stakeholders (Fasasi & Amadi. 2015). Hence, the whole-

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hearted need to change the situation for the better. One of the strategies for influencing the change, according to Jega and Bashir (2018) is teachers' ingenuity to create positive relationships with students in the learning environment. To foster the relationship adequately, teachers should use their wisdom to design appealing learning experiences. such as interactive lesson presentations, practical activities, discussion sessions and debates on contemporary science issues (Darling-Hammond, Hyler & Gardner, 2017). In line with the preceding appeal, Varga (2017) posited that the mentioned learning experiences in reality help students to perceive the teacher interpersonal behaviour of their teacher. This perception according to Smith & Ezeife (2010) eventually creates either positive or negative teacher-student relationships. Because of this. Gedamu and Shure (2015) posited that students' positive perception of teacher interpersonal behaviour, which is synonymous with the teacher-student relationship. promotes their achievement. laboratory skills acquisition and other learning outcomes. Similarly, Telli (2016) bolsters positive students' perception of teacher interpersonal behaviour as a platform for student's achievement. Inversely, Ebele and Olofu (2017) comprehended rightly that students' negative view of teacher behaviour hampers their success in senior secondary school examinations in Nigeria. Furthermore, Karamane, Vatou, Tsiqilis & Gregoriad (2023) established the fact that students' perception of teacher interpersonal behaviour predicts their learning outcomes in science.

Because of the fact that students' perception of teacher interpersonal behaviour impacts significantly on their learning outcomes, Zeng (2022) described the teacher interpersonal behaviour as a teacher-student relationship. where the perception of the relationship plays important role on learning results. conceptualize teacher interpersonal behaviour clearly, Wubbels, Cretons and Hoomayers (1985) adapted Leary's (1957) Model of Interpersonal Diagnosis of Personality into education and gave it a modified name "Model of Interpersonal

Teacher Behaviour (MITB)" (McLure, Fraser, & Koul, 2022). The model, thus, takes the shape of an octagon; that is having eight sectors representing eight teacher-student interpersonal dimensions.

#### THE OF CONCEPT **TEACHER** INTERPERSONAL BEHAVIOUR

The concept of teacher interpersonal behaviour was partly cropped out from System Approach to Communication Theory Watzlawick, Beavin and Johnson (1967) in which the classroom was conceived as an ongoing system. And, comparatively, advanced by Sullivan (1971) posits that students' perception (how students interpret an event) is related to the teacher-student relationship they experienced with their teacher in a learning context (Robinson, 2022). Teaching, the oldest noble profession, has been described as a form of communication, which develops in a process manner between a teacher and students in a classroom (Akhtamovna, 2023). Further, den Brok (2006) reflects conscientiously on the Wubbels et al (1985) Circumplex Model and frankly confirms that the classroom is an ongoing system. Being a system where communication (interaction) prevails, indeed, needs some stability to sustain (Barry, Paul, Burnett, Gillian, Jenny & David, 2020). To describe communication clearly, Watzlawick et al (1967) report that communication is progressive in its entirety; that is, it advances formally in rank order.

Furthermore, Watzlawick et al (1967) distinguish different levels of communication in an ongoing system like a classroom (Karamane, Vatou, Tsiqilis & Gregoriad, 2023)). Accordingly, the lowest level consists of a single message, question, assignment response and gesture (Tilga, Hein, Koka & Hagger, 2020). For example, the first question asked by a new teacher in a classroom may be to verify students' entry behaviour about a topic, which is really a form of first-level interaction. Of course, it is the lowest form because it is not enough to enable students to predict yet another set of questions that may emanate in the subsequent lesson. Secondly, the





intermediate type of communication is described by a chain of questions, assignments and gestures (Li & Kent, 2021).

Moreover, the highest profile of communication is the pattern level, which is characterized by repetition of questioning styles. assignments and other non-verbal manifestations. which enable students to form a stable picture of the teacher communication style (Lopez, 2011). In this vein, Asrar, Tarig and Rashid (2018) conclude that effective communication between students and teachers is very crucial in promoting positive learning outcomes. It is expected that the interpersonal behaviour of a teacher influences not only the behaviour of students but determines it, as well as affecting the behaviour of the teacher in return (Rodrigue, Bento, Cid, Neiva, Teixeira, Moutao, Marinho, Monteiro, 2018). In other terms, the teacher-student relationship is perceived as an ecosystem, where the teacher and the students' ambition depend on the contribution of each other (Xi & Yang, 2019). This mutualism of circular processes characterized teachers' and students' behaviour as actions, reactions, and relations forming a chain of classroom interaction.

Also, the concept of teacher interpersonal behaviour according to Zang (2022) depends exclusively on the student's perception of their teacher's behaviour. Consequently, it can

appropriately be described by the model of interpersonal behaviour (Misbah, Gulikers, Widhiarso, Mulder, 2022). Impliedly, the model interprets the type of communication behaviour (interaction) transpiring between a teacher and students, and of course how the students construe the behaviour (communication). As a consequence, the disposition of positive communication behaviour creates a conducive and friendly environment for successful and effective learning of prescribed school subjects (Ihekoronye, 2020). Equally, a manifestation of negative attributes leads to the formation of an unstable learning environment characterized by fear, lack of confidence and uncertainties (Mclead, 2023).

#### Model of Teacher Interpersonal Behaviour

The Model of interpersonal teacher behaviour is a standard for construing, mapping and assessing students' perception of teacher interpersonal behaviour (Tian & Shen, 2023). Teachers, in an attempt to achieve adequate learning goals, display a variety of interpersonal attributes (Rimm-Kaulman & Sandilos, 2023). Some of which encourage learners to accomplish given learning tasks, while others derail them from getting to the predetermined targets. To substantiate the phenomenon satisfactorily,

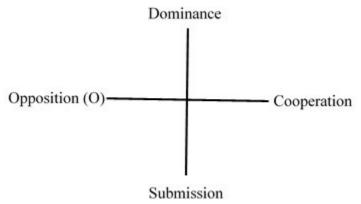


Figure 1: Leary's Model of Interpersonal Diagnosis of Personality.

Madike (2015) submit that between the years 1978 to 1984, Wubbel et al (1985) adapted

the Model of Interpersonal Diagnosis of Personality advanced by a Clinical Psychologist

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and Psychotherapist, Timothy Leary in 1957. Leary used the model purposely to conceptualize, organize, and assess the behaviour of clients with psychological related problems. According to Leary (1957), communication between a therapist and a client flows via two dimensions (axes), that is; the vertical dimension, which he called the dominance/submission axis. As well as, the horizontal dimension, which he named the opposition/cooperative axis as shown in Figure 1. Though the two dimensions were described in different nomenclature by different authors, for example, Status/Solidarity (Brown in Telli (2007) and Warmth/Directivity (Bunkin & Buddle in Ried, 2007).

By using the model, Leary (1957) avers that the behaviour of participants in an interactive event can be rated according to the dimensions (dominance/submission opposition/cooperative). Furthermore, Leary (1957) validates the model as a universal descriptor of human interaction, for example, teacher-students and family interaction. As the need to assess teacher-student relationship becomes crucial in the Netherlands under a programme titled "Education for Teachers", Wubbels, Cretons and Hoomayers (1985) as stated in the preceding section adapted the Leary Model of Interpersonal Diagnosis of Personality Behaviour to meet the objectives of the programme. (den Brok, Fisher & Koul, 2005). Wubbels et al (1985) in their process of modification, also restructured the two-axis of Leary's model into a four-axis configuration, thereby making an octagon (eight-sector model). Further, the authors made this innovation so that each sector represents a particular teacher's interpersonal behaviour as shown in Fig. 2. Subsequently, in their effort to restructure Leary's model, they retained the original dimensions and subsequently change their names from vertical/horizontal dimension influence/opposition dimensions. Also, they rearranged the dimensions at an equal distances to each other on the circular structures and maintain an equal distances to the middle of the circle. In light of the earlier statement, the eight

teachers interpersonal behaviour are: leadership, helping, understanding, students' responsibility, uncertain, dissatisfied, admonishing and strict.

According to Telli et al (2007), the influence dimension describes who is directing and determining interactive sessions and the frequency of domination as well; and the proximity dimension, on the other side, discloses the level of collaboration and contiguity between the parties involved in a communication occasion. The two dimensions in the Wubbel et al, (1985) are independent and important for effective teacher interpersonal relationships that facilitate positive learning outcomes (Wubbels & Brekelemans, 2005). From Fig. 2, the two dimensions, that is, DS and CO signify two contrasting interactive behaviour. In addition, the DS dimension portrays dominance and submission, whereas, the dimension CO denotes cooperation and opposition.

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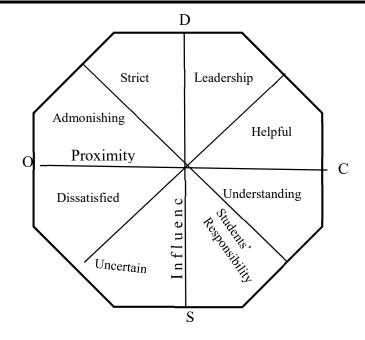


Figure 2: Model of Teachers-Student Interpersonal Behaviour

According to Gurtman & Pincus, (2000), Wubbel et al, (1985) and Leary, (1957) models are theoretically linked to the Circumplex Model (Fig. 3). The Circumplex Model according to Gurtman & Pincus, (2000) assumes the eight interactive sectors as they are designed in Fig. 2. In addition, the model predicts that relationships between two neighbouring scales are assumed to be maximum, nonetheless, the relationship diminishes as the scales move distant apart, until the opposite scales are negatively correlated (Sun, Mainhard & Wubbels, 2018). Additionally, the circumplex model provides an explicit description of each of the teacher interpersonal behaviour (Tsigilis, Karamane & Gregorialis, 2023). From the model, it is noticeable that the sectors DC and CD possess dominance and cooperation attributes respectively. Also, it is explicit in the DC sector that teacher control of classroom activities out scales the teacher's cooperation with students. This can be demonstrated in a classroom where a teacher dominates all lesson activities, directs students to do assigned activities and personally sets rules for

conducting learning activities. Similarly, the CD sector is characterized by a teacher-student interaction, where the teacher involves, encourages and instils confidence in students to undertake learning activities. It is in this type of classroom, the teacher is found moving from one bench to another cracking jokes, assisting and behaving joyfully in a friendly manner (Reid, 2007). The following subsections describe the eight teachers interpersonal behaviour as advanced by Wubbels et al (1985).

#### Teacher Leadership Behaviour

From Figures 2 and 3, leadership behaviour occupies the DC sector. Teacher leadership behaviour is an interpersonal skill, which a teacher demonstrates in and outside the classroom that has an academic and long-term impact on students' learning outcomes (Zheng & Ye, 2022). Essentially, leadership has been described by Rupsciene and Skarbaliene (2010) as a process during, which one person determines course or purpose for another /other person and

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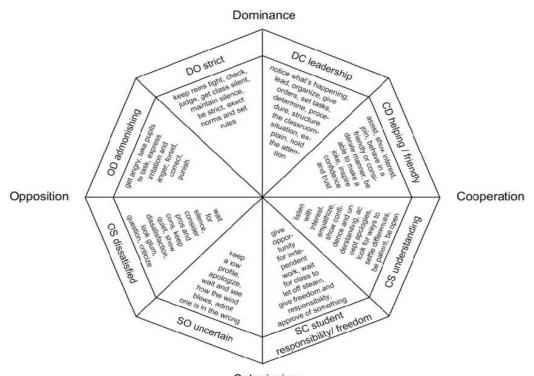






together they move in this direction adequately and assiduously. Impliedly, a teacher with leadership behaviour decides classroom activities, existing classroom rules and regulations and all courses of action. Besides, he is too egocentric in approach, thus, he leads in all classroom activities, such as discussions, decision making and assumptions (Telli et al, 2007).

Perceptibly, teachers with a strong desire to achieve teaching and learning goals significantly display leadership quality consciously or unconsciously to influence students to achieve and develop positive feelings towards subject matters (Oqvist & Malmstrom, 2017). This is indeed a welcome development in as much as the behaviour displayed does not traverse boundaries of totalitarianism.



Submission
Figure 3: The Circumplex Model, source (Gurtman & Pincus, 2000)

### Teacher Helping Behaviour

The teacher helpful behaviour occupies sector CD in the circumplex model (Fig. 2 and 3). Teacher helpful behaviour implies a teacher's sense of assisting students to achieve sets of learning goals (Misbah, Gulikers, Maulana & Mulder, 2015). Alongside, he demonstrates manners that make students assume that they are working together with their cohort. This would definitely comfort and stimulate them to focus on

what they were assigned to do. In line with these claims, Ehigbor (2017) affirm that the helpful attribute of a science teacher is positively related to a number of learning outcomes.

#### Teacher Understanding Behaviour

From Fig 3, the sector CS describes the teacher understanding behaviour. Teacher understanding behaviour is yet another teacher attribute, which relates significantly to learning

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outcomes (Ehigbor, 2017). Teachers with an understanding trait are enthusiastic to identify behaviour change in students (Derekhshan, 2022). He also inquires about the causes of the change. According to Tan, Wei and Cui (2022), an understanding teacher listens keenly to students' complaints related to academic and personal experiences. Thus, he patiently guides them to see light at the end of the tunnel.

#### Teacher Students' Responsibility Behaviour

Teacher students' responsibility behaviour is properly placed in the SC sector in Figure 2. The code SC from Figure 3 denotes a teacher's autonomy offered to students to decide what would be the do's and don'ts of a classroom. select time for submitting classwork, design experiment, and other academic activities (Fan, 2012). Ideally, it is good to involve students in decision-making concerning learning activities and other classroom relational variables. Also, it is worthy to give them the liberty to advise on how should the classroom atmosphere (Chachkhiani, 2023). The author also adds that this autonomy should be under the watch and moderation of a teacher. Ironically, it would be risky to let them decide and conduct class affairs alone.

#### Teacher Uncertain Behaviour

The teacher uncertain behaviour placed in the SO sector in the Circumplex Model of personal teacher behaviour (Fig. 3) is generally described as a behaviour, which dimensionally inclines more to the submission axis than the corresponding opposite one. It is yet another teacher-related variable, which has an impact on students' learning outcomes. Substantially, literature in science education has indicated the existence of negative relationships between uncertain teacher behaviour and cognitive with other non-cognitive learning outcomes in countable instances across the globe (Misbah *et al* 2015).

#### Teacher Dissatisfied Behaviour

The teacher dissatisfied behaviour is perfectly placed in the OS sector of the model of teacher interpersonal behaviour. By interpretation, the encryption OS implies a joined teacher behaviour made up of little "submission attributes" and more of "opposition features". In other terms, it is a blended character in which opposition components significantly glare more than the submission constituents. Dissatisfied teacher behaviour is been described as a teacher's discontent with students' academic efforts (Zhan & Isma'il, 2022). It implies that no quality level of work students would submit to their teacher would be worthy enough to impress him, let alone praise them. Records have it that teacher dissatisfied behaviour does not correlate to any positive learning outcome (Khine & Fisher, 2011). According to den Brok, Fisher and Koul (2005) dissatisfied teachers do not mind to inquire the cons and pros of why students behaved in a disorderly manner.

#### Teacher Admonishing Behaviour

Similarly. teacher admonishing behaviour occupies the OD sector of the circumplex model. Admonishing behaviour is there circulating in the spirit of teachers who get angry quickly and bitterness at no cost (Wubbels, et al as cited in Wei, den Brok & Zhou, 2009). They are the category of instructors who forbid any form of observation and comment from students during an interaction. They also have the tradition of scolding and rebuking students (Wubbels & Brekelemans, 2005). It is common to listen to dispiriting pronouncements, such as "I will send you out from my class", "you are all nonsense", and "you are a son/daughter of bitch and all sorts demoralizing statements. These pronouncements are actually parallel to the principles and practices of teaching. Also, they panic students and spontaneously create a sense of fear of what may be the outcomes in them. Okada and Gray(2015) argue that students do not learn comfortably in a scary environment.





#### Teacher Strict Behaviour

The strict teacher behaviour positioned in the DO sector of Figure 3, is a blend of dominance elements and opposition rudiments. Strict teacher behaviour becomes conspicuous when a teacher demands that all the laid-down classroom rules and regulations are strictly adhered to (Adityas, 2022). Such teachers by the nature of their behaviour do not tolerate slightest of students' mistakes. Students in this type of learning environment are too apprehensive to ask questions related to cloudy areas of the subject matter.

# ASSESSING STUDENTS' PERCEPTION OF TEACHER-STUDENT INTERPERSONAL BEHAVIOUR

den Brok et al, (2005) contends that if students' perception of teacher interpersonal behaviour is the platform on which research on teacher interpersonal behaviour is rested upon, hence, the need to determine and assess the perception is very crucial (McLure, Fraser & Koul, 2022). The result of the assessment in this sense will be used, for example, to organize professional development programmes for teachers amongst other purposes (Misbah, Gulikers, Widhiarsis & Mulder, 2022). To assess students' perception of teacher interpersonal behaviour effectively, the Questionnaire on Teacher Interaction (QTI) is a valuable research instrument (Teng –Ong & Long Oek, 2023).

QTI was originally designed to map out the secondary students' perception of the classroom interactive behaviour of their science teachers in a Teacher Education Project at Utrecht University, Netherlands as stated earlier (Wei *et al*, 2009). The first draft of QTI according to den Brok *et al*, (2005) was made up of more than 200 items. Following the four succeeding laborious trials involving statistical analyses, focus group interviews and think-aloud sessions with students and teachers on the sample items, the final copy of 77 items was finally constructed.

Additionally, the 77 items QTI was face validated through interviews with teachers, students, teacher educators and researchers

(Sofa & Doosti, 2017). Initially, the QTI was drafted in Dutch, but later translated into English for use in the USA and Australia. Moreover, the 77-item version has been proven to be a valid and reliable tool in the USA and Australia (Horvath & Toth, 2021). In recent times, there was a crosscultural validity study matching students' responses to the QTI items in China, Singapore. Brunei, the USA, the Netherlands, Slovakia, and Australia. The results of analyses confirmed the encouraging reliability and validity of QTI (Brit, 2013). Furthermore, the QTI was translated and used in Turkey (Telli, den Brok & Cakiroglu, 2007). From a general perspective, QTI was translated into more than fifteen languages across the globe (den Brok et al. 2005)

Going further, the American 64-item version evolved in 1988. This version was initially used in Australia (Gattman, 2022). Later, the 48-item economical Australian version of the QTI emerged for use in Australian science secondary schools (Fisher, Henderson & Fraser in den Brok et al, (2005). Whichever version of QTI was used as an instrument for collecting data on students' perception of teacher interpersonal behaviour in a study, analyses of data have indicated that students perceived their teachers demonstrating more dominance than submissive, as well as expressing more cooperation than the opposite.

#### CONCEPT OF ACADEMIC ACHIEVEMENT

Perhaps. achievement might interpreted as a proficiency a person possesses after going through some experiences and training. For example, some teachers were sent to participate in a workshop training programme on the effective use of Statistical Package for Social Sciences (SPSS). At the end of the programme, a post-test was administered and seventy-five per cent of the teachers passed the test. In a report submitted to the ministry of education, a statement was captured that "the achievement rate of the participants was very high. To make this assertion follow suit, Algarabel and Dasi (2001) bolster that achievement generally is a competence an individual has in an area of content. Further, the authors elaborate that the content area may be

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cognitive-based or non-cognitive variables. Normally, the achievement is viewed as success made in all endeavours of life, such as agriculture, business, sports, academics and so on. Specifically, academic achievement refers to students' success in academic programmes and it is usually determined by scores in examinations (Adegboye, 2018).

Similarly, Ugwuadu (2016) opines that academic achievement is determined by grades students obtained in examinations, such as WASSCE. From a perspective, Dev (2016) posits that academic achievement is the extent to which a student, teacher or institution has attained their short or long-term educational goals, such as completion of the diploma, BSc, HND and Ph. D programmes. The author rightly concurs with the view of Adegboye (2018) and Ugwuadu (2016) who posit that academic achievement is determined through examination scores or grades. In a divergent view, Dev (2016) claims that academic achievement is not only a pointer to the effectiveness of academic programmes but a major determinant of future youth. Similarly, Cheng and Wang (2019) conceive academic achievement as academic performance of an individual and is classified as low or high achievement. To elucidate the author's view clearly, Ugwuadu (2016) describes low academic achievement, particularly in WASSCE as when students score D7 and E8 in SSCE. Ugwuadu, (2016) also posits high academic achievement in WASSCE when students score C6 to A1. In the light of this, it is nauseating to mention that students' achievement in WASSCE generally in recent years, unfortunately, oscillates within the grade space of D7 and F9. This is indeed a pointer indicating that something unusual is undermining the proper learning of the subject in the state.

#### **REVIEW OF RELATED EMPIRICAL STUDIES**

These are the studies that have been undertaken in different continents and different academic disciplines.

## Teacher-Student Interpersonal Behaviour and Students' Academic Achievement

Wei, den Brok and Zhou (2009) examined the relationship between students' perception of English as a Foreign Language (EFL), teacher interpersonal behaviour and their fluency in English in secondary education in China. A total number of 160 students from four classes in the southwest part of China participated in the study. This sample size was drawn purposely through a stratified random sampling technique. The instrument used in the data collection were QTI and EFL Fluency Achievement Test (EFLFAT). The data so collected were analyzed using descriptive statistics, correlation coefficient and regression tools. The interpretation of data analyses indicates that all the scales of QTI did not correlate with the student's achievement, except the teacher uncertainty behaviour. In other words, among all teacher interpersonal behaviour, only the uncertainty behaviour scaffolds the students' achievement. Furthermore, it was observed that teacher helpful behaviour was the only substantial predictor for student achievement in EFL. Dimension-wise, proximity was found associating with students' achievement. Also, girls were noticed performing higher than associate boys. Moreover, it was observed that the tolerantauthoritative profile was the most common interpersonal style based on Chinese students' perceptions. Based on the preceding remarks, it was suggested that education stakeholders should design observation schedules to monitor teacher-student relationships in classrooms for better learning outcomes amongst others.

Ehigbor (2017) investigated learners' perception of teacher interpersonal behaviour as a predictor of their academic achievement in the junior secondary school certificate examination (JSSCE) in Edo State, Nigeria. A research question and hypothesis were framed to guide the study. The hypothesis was tested at a 95 % level of confidence. The study employed a predictive-correlational survey design. The sample size consisted of 850 junior secondary students who sat for the junior secondary school certificate





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2012/2013. The examination in sampling technique adopted was stratified random sampling. The study also involved 84 mathematics teachers drawn through the same technique. The instruments used for the data collection were the **JSSCE** 2012/2013 mathematics Questionnaire on Teacher Interaction (QTI). Linear Regression was the instrument used in the data analysis. The interpretation of the data analysis indicates that students' perception of the teacher's interpersonal behaviour predicts their achievement in mathematics. Based on the findings incurred, the author recommended that teachers and school heads should be given adequate support to discharge their primary assignments efficiently.

Yusuf and Yinusa (2016) examined teacher-student interpersonal characteristics as a determinant of the academic performance of junior secondary school students in Osun State, Nigeria. The study adopted a descriptive survey to generate sample opinions from the selected participants. The sample size was made up of 1000 junior secondary students and 50 teachers all drawn through random sampling. Teacher Interpersonal Characteristics as Determinant of Academic Performance Questionnaire (TICDAPQ) and students' academic performance collected from the examination offices in the study area were the instruments for data collection. Four hypotheses were formulated to guide the study. The hypotheses were tested at a 0.05 level of significance using Chi-Square. The analysis of data indicates the presence of a positive relationship between the independent and dependent variables. Based on the findings, it was recommended that teachers should guide students properly on all things related to academic and non-academic issues.

Julius (2014) assessed the relationship between teachers interpersonal behaviour and pupils' academic achievement in Kenva. The research design adopted in the study was a descriptive survey. The 80 pupils that participated in the study were drawn through a purposive sampling technique. The instruments used for the data collection were a teacher-student relationship

questionnaire and an interview guide technique. The data collected through the instruments were frequency analyzed using counts percentages. The outcomes of the data analysis reveal that teacher interpersonal behaviour had a significant impact on pupils' academic achievement. Based on the data analysis, it was recommended that the teacher-student ratio should be reduced to the barest minimum. Additionally, school administration should devise ways of monitoring and evaluating curriculum implementation in schools.

Xu and Qi (2019) investigated the relationship between students' perception of teacher interpersonal behaviour and their academic achievement through the mediation effect of teacher self-efficacy in China. The design of the study was a correlational survey. The sample size consisted of 42, 643 eighth-grade students. This size was selected through a twostage unequal probability sampling technique. Instruments used in the data collection were a questionnaire, self-efficacy student-teacher questionnaire and Mathematics Achievement Test. The data so collected were analyzed by using mean, standard deviation, and ANOVA. Other tools used in the analysis were PPMC and regression statistics. The interpretation of the data analysis indicates that girl students perceived the teacher-student relationship more positively than boys do. Also, the performance of girls was more favourable than that of boys. In addition, students' perception of the teacher-student relationship correlates significantly with teacher self-efficacy. Besides, the student's perception had related as well as improved their achievement

Charalambous and Kakkinos (2017) investigated the structure of pre-adolescent's perception of teacher interpersonal behaviour and their learning outcomes in Turkey. The research design adopted was a mixed method, which combined a quantitative and qualitative approach towards realizing the central objectives. The participants were 504 pre-adolescent (10-13 years) students and their 36 teachers selected through a stratified random sampling technique. The instruments used in the data collection were





QTI and an achievement test. The data collected were analyzed using mean and standard deviation and correlation coefficient. The interpretation of data analysis reveals that students had perceived their teachers displaying more proximity behaviour in the classroom, which as a result impacted their academic achievement.

Nugent (2009) examined the impact of interaction teacher-student on students' motivation and academic achievement in the USA. The design of the study was a correlational survey. The study involved 217 students and 20 teachers as participants. This sample size was drawn through a stratified random sampling method. The instruments used in the data collection were the Motivated Strategy for Learning Survey (MSLS), QTI and students' GPA obtained from students' past examination records, mean, standard deviation statistics and PPMC were the chosen and suitable tools for data analysis. The result of the analysis indicates that the student's perception of the teacher-student relationship correlates significantly with their motivation in learning. As well, the same perception relates their academic to achievement. As suggested in the previous studies, the author recommends that teachers should exhibit welcoming interactive attributes in learning environments.

Furthermore, Awoniyi, Butakor and Al-kurasi (2021) investigated how the teacher-student impacted relationship eleventh graders' performance in mathematics in Cape Metropolis. Ghana. To meet the objectives of the study, the researchers employed a descriptive survey design. The sample size of 2,575 students was strategically selected through a simple random sampling technique. Data were collected from the participants through a questionnaire titled "Teacher-Students Interaction Questionnaire". The data collected so far were analyzed using regression analysis. Findings incurred at the end of data analysis and interpretation show that the teacher-student relationships correlated statistically significantly with eleventh graders' performance in mathematics in Ghana.

#### CONCLUSION

Review of related empirical literature in the previous sections reveals that the hypothetical low achievement in senior secondary certificate examinations exits and perpetuates in recents times. This predicament was most often related to inability of teachers to demonstrate positive teacher interpersonal behaviour in learning environments. Moreso, it is noted that students' perception of positive teacher interpersonal behaviour promotes students' achievement and skills acquisition. In light of this, teachers are passionately urged to harness their treasures of experience to create conducive learning environment that influences favourable learning outcomes through demonstration of progressive teacher interpersonal behaviour.

#### REFERENCES

Adegboye, I. O. (2018). Influence of achievement motivation in Nigerian undergraduates' attitude towards the examination.

International Journal of Instruction, 11
(1), 77-88.

Adityas, M. (2022). The self in struggle:
Indonesian secondary school teachers
multiplicity of voice amidst competing
discourses of tolerance. Unpublished
Doctoral Thesis of the University of
Aukland.

Akhtomovna, M. O. (2023). Using active method in teaching oral communicationin a foreign language. European Journal of Innovation in Nonformal Education, 3(2), 60-70.

Algarabel, S. & Dasi, I. (2001). The definition of achievement and construction of a test for its measurement. A review of the main trends. *Psicological*, 22, 43-66.

Asrar, Z., Tariq, N, & Rashid, H. (2018). The impact of communication betweenteachers and students: Acase study of the Faculty of Management Science, University of Karachi, Pakistan.





- European Scientific Journal, 14(16), 32-39.
- Awoyini, F. C. Butakor, P. K. and Al-kurasai, H. (2021). The role of teacher-student relationship on performance in mathematics of eleventh graders in the Cape Coast Metropolis: A critical friendship perspective. Cogent Education, 8(1), http://doi.org/10:1080/2331/186x2021.19 08690.
- Barry, C. D., Part, C., Burnett, N. P., Gillian, B., Jenny, C. & David, S. (2020). Students' conception of learning, the classroom environment and approachs to learning. *Journal of Educational Research*, 93(4), 262-270.
- Brit, J. E. (2003). Teacher-student relationship and students' achievement in grade six and seven mathematics. Unpublished Doctoral Thesis of the Liberty University.
- Chachkhiani, K. (20230. The moderating role of teacher autonomy for classroom practices and students' achievement:

  Cross-countryanalysis. Unpublished
  Doctoral Thesis of Arizona University.
- Chang, C., Wang, Y. & Liu, W. (2019). Exploring the related factors in students' academic achievement for the sustainable education of rural areas. *Sustainability*, 11.
- Charalampous, K. & Kokkinos, C. M. (2017). The structure of pre-adolescents perceptions of their teacher's interpersonal behaviour and their relation to pre-adolescents learning outcomes. *Educational Studies*, 44(2), 167-189.
- Chikedu, R. E. (2022). Teacher-student relationship and academic performance in senior secondary schools in Enugu State. *International Journal of Educational Research and Sustainable Development*, 2(2), 1-9.
- Daily Post (2019). Bauchi has only 44 medical doctors. http://dailypost.ng>News.

- Darling-Hammond, L., Hyler, M. E. & Gardner, M. (2017). Effective teacher professional development. Retrieved from http://learningpolicyinstitute.orgproductfile s.
- den Brok, P., Fisher, D. & Koul, (2005). The importance of teacher interpersonal behaviour for secondary science students' attitude in Kashmir. *Journal of Classroom Interaction*, 40(2), 5-19.
- Derekhshan, A. (2022). The 5C positive teacher interpersonal behaviour: Implication for learner empowerment and learning in L2 context. Chem Springer Nature.
- Dev, M. (2016). Factors affecting academic achievement: A study of elementary school students of NCR, India. *Journal of Education and Practice*, 7(4).
- Ebele, U. F. & Olofu, A. (2017). Study habit and its impact on secondary students' academic performance in biology in the Federal Capital Territory, Abuja. Educational Research and Review, 12(10). 001:0.5897/ERC2016.3117.
- Ehigbor, B. O. (2017). Learners' perception of teachers' interpersonal behaviour as a predictor of academic achievement in junior secondary school certificate examination of Edo State, Nigeria.

  Journal of Education and Practice, 8(20), 144-149.
- Fasasi, K. A. and Amadi, G. A. (2015). Four radical panaceas for reversing mass failure in certificate English Language examination in Nigeria. *Journal of Education and Practice*, 6(17), 160 172.
- Gattman, G. D. (2022). An example of students' perception of career and technical evaluation teachers' interpersonal behaviour and their impact on students' achievement. Unpublished Doctoral Thesis of the Gardner University.
- Gedamu, A. D. & Shure, M. (2015). The Association between EFL teachers' interpersonal behaviour and students'





- achievement in the English language: Select secondary schools in focus. Science, Technology and Arts Research Journal, 4(3), 222-229.
- Gogo, Z. I. and Ihibo, C. G. (2020). Impact of the student-teacher relationship in senior secondary students' performance in introductory calculus. *International Journal of Advance Education and Research*, 5(1), 1-8.
- Gurtman, M. B. & Pincus, A. (2003). The circumplex model: Methods and research application. Handbook of Psychology. DOI: 10:1002/0471264385.wei0216.
- Horvath, K. & Toth, P. (2022). Application of QTI quary to explore the opinion of teachers and students of Capathian Basin about ideal teacher. *Opus et Educatio*, 8(2). DOI:http://doi.org/10.3311//ope.424.
- Ihekoronye, E. O. (2020). Conducive school environment: A necessary factorfor effective teaching and learning in public secondary schools in Gwagwalada Area Council Of Abuja. Benue State University Journal of Educational Management, 2(1), 204-213.
- Jega, S. J. & Bashir, K. (2018). The relationship between teachers' variables and students' achievement and interest in Mathematics in Kebbi State. *International Journal of Education and Evaluation*, 4(3), 29-44.
- Julius, C. K. (2014). Influence of teacher characteristics on pupils' academic performance in public primary schools in Kenya: A case of Akithi Division, Meru County, Kenya. Unpublished Degree of Master of Arts in Project Planning and Management from the University of Nairobi.
- Karamane, E., Vatou, A., Tsiqilis, N. & Gregoriad, A. (2023). Comparing students' and teachers' perceptions of teachers' interpersonal behaviour in Greek secondary education. Learning

- Environment Research. http://doi.org/10.1007/s10984-023-09459-9
- Khine, M. S. & Fisher, D. L. (2011). Classroom environment and teachers' cultural background in secondary science classes in an Asian context. Paper to be presented at the International Educational Research Conference, University of Notre Dame, Fremantle, Western Australia. 2-6 December 2001.
- Leary, T. (1957). *An Interpersonal Diagnosis of Personality*. New York: Ronald Press Company.
- Li, C. and Kent, M. L. (2021). Exploration on mediated communication and beyond: Toward a theory of social media. *Public Relation Review*, 47(5), 10222112.
- Lopez, M. C. (2011). Development of the Orchestral Theory of communication: The inclusion of the medium-message axiom. https://www.researchgate,net>312.
- Madike, V. N. (2015). Students' perception of biology teachers' interpersonal teaching behaviour and students' achievement.
  Unpublished Ph. D Thesis of the Walden University.
- McLead, S. (2023). Erik Erickson's stages of psychological development. Retrieved from http://www.simplypsychological.org>
- McLure, F. I. Fraser, B. J. & Koul, R. B. (2022). Structural relationship between classroom emotional climate, teacherstudent interpersonal relationship and students' attitude in STEM. Soc Psychol Educ, 25, 625-648. http://doi.org/10.1007/s11218-022-09694-7.
- Misbah, Z., Gulikers, J., Maulana, R. & Mulder, M. (2015). Teacher interpersonal behaviour and students' motivation on competence-based vocational education: Evidence from Indonesia. *Teaching and Teacher Education*, 50, 79-89.
- Misbah, Z., Gulikers, J., Widhiarso, W. & Mulder, M. (2022). Exploring connections





- between teacher interpersonal behaviour, students' motivation and competency in competency-based learning environments. *Learning Environment Research*, 25, 549-661.
- Mustary, M. (2020). Impact of teacher-student relationship on students' academic performance at the secondary school level in Dhaka City. *International Journal of Psychosocial Rehabilitation*, 24(08), 2939-2957.
- Nughet, T. (2009). The Impact of teacher-student interaction on student motivation and achievement. Unpublished Ph. D Dissertation of the University of Central Florida.
- Okada, A. & Gray, P. (2023). A climate change and sustainability education movement: Networks, open-schooling and 'CARE-KNOW-DO' framework. Sustainability, 15(3). http://doi.org/10.3390/su1503356.
- Ononye, F. O. and Obiakor, M. I. (2020). Factors responsible for massive failure in economics in senior secondary schools examination in Enugu Education Zone. Unizik Journal of Educational Research and Policy Studies. 1(1), 90-107
- Oqvist, A. & Malmstron, (2017). What motivates students? A study on the effect of teacher leadership and students' self-efficacy. *Journal of Leadership Education*.
  - DOI:10.1080/13603124.2017.1355480.
- Reid, C. (2007). Teacher Interpersonal
  Behaviour: Its influence on students'
  motivation, self-efficacy and attitude
  towards science. Unpublished PhD
  Dissertation of the Curtin University of
  Technology. Perth. Research in Science
  and Technology Education, 10(2), 187201.
- Rimm-Kaulman, S. & Sadilos, L. (2023).
  Improving students' relationship with teacher to provide essential supports for learning. American Psychological

- Association. Retrieved from http://www.app.org>relationships.
- Robinson, C. D. (2022). A framework for motivating teacher-student relationships. Educational Psychology Review. doi: 10.1007/s10648-022-09706-0
- Rotrigues, T., Bents, T., Cid, L., Neava, H. P., Teixeira, D., Mouto, J., Marinho, D. A. and Monteiro, D. (2018). Can interpersonal behaviour influence the persistence and adherence to physical exercise practice in adults? *A systematic review. Front Psychol.* http://doi.org/10.3389/fpsyg.2018.02141.
- Rupsciene, L. & Skarbaliene, A. (2010). The characteristics of teacher leadership.

  Retrieved from http://wwwresearchgate.net>publication> 265009242.
- Sofa, M. A. & Doush, M. (2017). Culturallyadaptive version of the Questionnaire on Teacher Interaction to investigate teacher interpersonal behaviour. *Learning Environment Research*, *2*, 199-219.
- Smith, C.B. & Ezefe, A.N. (2010). The relationship between student's perceptions of their classroom environment and their attitude toward science in grade nine applied science classes. Retrieved from www.unco.edu.ae-extra/2010/4/ezeife.html. On 24th November 2020.
- Sullivan, H. S. (1971). The fusion of psychiatry and social science. W. W. Norton and Company, New York, USA.
- Sun, X., Mainhard, T. & Wubbels, T. (2018).

  Development and evaluation of Chinese version of of QTI. *Learning Environment Research*, 21, 1-7.

  http://dx.doi.org/10.1007/s10984-017-9243-z.
- Tan, L., Wei, B. & Cui, T.(2022). Relationship among perception of teacher autonomy support, achievement motivation,





#### JOURNAL OF SCIENCE TECHNOLOGY AND EDUCATION 11(3), SEPTEMBER, 2023 ISSN: 2277-0011; Journal homepage: www.atbuftejoste.net

- intellectual risks and science academic performance: Aserial mediation model. International Journal of Science Education.
- Doi: 10.1080/09500695.2022.2151328.
- Telli, S. (2016). Students' perception of teachers in six across four different school subjects: control is good, but affiliation. Teacher and Teaching, 22(6), 729-744. DOI:10:1080/13540602.2016.1158461.
- Telli, S., den Brok, P. & Cakiroghu, J. (2007). Students' perception of science teachers' interpersonal behaviour in secondary schools: Development of a Turkish version of the questionnaire on teacher interaction. Learning Environment Research, 10(2), 115-129.
- Teng Ong, S. G. & Long Ouek, G. C. (2023). Enhancing teacher-student interaction and students' online engagement in an online learning environment. Learning Environment Research, 26, 681-707.
- Tian, L. & Shan, J. (2023). The effect of perceived teachers' interpersonal behaviour on students' learning in physical education: A systematic review. Front Psychol. Doi:10.3389/psyg.2023.1233556.
- Tilga, H., Hein, V., Koka, A, and Hagger, M. S. (2020). How physical education teacher behaviour is related to students' healthrelated quality of life. Scandinavian Journal of Educational Research, 64(5), 661-676.
- Tsigilis, N., Karamane, E, & Gregiriadis, A. (2023). Examining student-teacher interpersonal relationship Cicumplex Model in the Greek educational context. Journal of School Nursing, 126(2). http://doc.org/10.1177/003329412110610 78.
- Ugwuadu, O. R. (2011). Effect discourse pattern on students' achievement and interest in Biology. Unpublished Thesis of the

- Department of Science Education, University of Nigeria, Nsukka.
- Varga, M. (2007). The effect of teacher-students relationship on the academic engagement of students. Unpublished Thesis of Master of Education, Goucher College.
- Watzlawick, P. Beavin, J. & Jackson, D. (1967). System theory-theory of Communication. Retrieved from www/terapiafamilare.org/La.
- Wei, M., den Brok, P. & Zhou, Y. (2009). Teacher interpersonal behaviour and students' achievement in English as a foreign language in China. Learning Environment Research, 12,157-174.
- Wubbels, T. & Brekelmens, M. (2005). Two decades of research on teacher-students relationship in class. Journal of Educational Research, 43, 6-24.
- Wubbels, T. Cretons, H. A., & Hooymayers, H. R. (1985). Dissolves the problem of beginning teachers. Paper presented at The Annual Meeting of American Educational Research Association.
- Xi, L. & Yang, Q. (2019). Modelling and analysis on teacher-student relationship. Discrete Dynamics in Nature and Society. http://doi.org/10.1155/2019/5481926.
- Xu, Z. & Qi, C. (2019). The Relationship between teacher-student relationship and achievement: The Mediating role of selfefficacy. EURASIA Journal of Mathematics, Science and Technology Education, 15(10), 1-7.
- Yusuf, F. A. & Yinusa, R. O. (2016). Teachers' characteristics as determinants of academic performance of junior secondary school students in Osun State. Nigeria, Journal of Scientific Research and Reports, 9(5), 1-9. https://doi.org/10.9734/JSRR/2016/22001
- Zeng, Q (2022). The role of teachers' interpersonal behaviour in learning academic achievement. Front Psychol,





13. http://doi.org/10.3389/psyg.2022.921832

Zhan, H. & Isma'il, M. I. R. M. (2022). Teacher interpersonal behaviour in the classroom: An assessment of teachers' leadership and attitude in Malaysian secondary schools. *Higher Education* 

and Oriental Studies, 25(5), 24-37. http://doi-org/10.54435/heos-v215.76. Zheng, X. & Ye, J. (2023). Teachership for

professional development in a networked learning community: A Chinese case study.
http://doi.org/10.1171/174114322111212 24.