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Impact of Teacher Classroom Management on Students' Performance in Basic Science in Rivers State.

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Abstract
Effective classroom management and teacher motivation are critical for students' academic success, particularly in Basic Science. This study examines how teachers' motivation and attitude contribute to good classroom management and its impact on students' academic performance. The study adopted a survey design with all the junior secondary section as the population for the study from which a sample size of 200 students and 100 teachers were selected through the stratified random sampling techniques. The study was guided by four research questions and as well four null hypotheses tested at 0.05 level of significance. Data used for the analysis was gathered through an instrument titled Teachers Classroom Management Strategies Questionnaire (TCMSQ). The instrument was validated and its reliability was established through the Cronbach alpha r=0.8. The result showed a relationship between classroom management and student performance, between teachers' attitude as a management strategy with students' performance and teachers' motivation as a strategy and students' performance though the relationship was weak. Consequent to the above results, some recommendations were made. The study concluded that teacher's classroom management has a relationship with students' academic performance in basic science.

Keywords: Classroom Management, Academic Performance, Teacher, Attitude, Motivation

Introduction

Classroom management is a fundamental aspect of effective teaching, directly impacting student learning and academic performance. It encompasses a variety of strategies and techniques aimed at creating an environment that supports learning. This includes setting clear expectations, establishing routines, and fostering an atmosphere of respect and collaboration. According to Bradshaw et al. (2010), well-managed classrooms contribute significantly to students' academic success, particularly in subjects like basic science. One key way that classroom management affects student performance is by maximising instructional time. Teachers who implement effective routines and procedures reduce classroom disruptions, allowing more time for learning activities. Canter (2016) notes that well-managed classrooms experience fewer interruptions, enabling students to engage more deeply with the subject matter. In Basic Science, where concepts are often sequential and cumulative, uninterrupted instructional time is critical for mastering foundational knowledge and skills. Another crucial aspect of classroom management is creating a positive learning environment. Brophy (2016) stresses that a supportive and orderly classroom climate enhances student engagement and motivation. In such an environment, students feel safe, respected, and more inclined to participate actively in class discussions, ask questions, and collaborate with peers. This is especially important in science education, where hands-on activities and experiments are key to understanding scientific principles. By fostering a positive classroom atmosphere, teachers can boost students' enthusiasm for learning, ultimately improving their academic performance in basic science.

Moreover, effective classroom management practices are linked to the development of self-regulation and discipline among students. Levin and Nolan (2014) argue that when teachers consistently enforce rules and procedures, students learn to manage their own behaviour and focus on academic tasks. This self-regulation is crucial for success in science subjects, which often demand sustained attention and critical thinking. Teachers who model and reinforce appropriate behaviours help students develop the discipline required to complete complex science projects and experiments. The relationship between teachers and students also plays a significant role in classroom management and academic performance. Positive teacher-student relationships are associated

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with higher levels of student achievement and motivation (Pianta et al., 2012). In the Basic Science classroom, where students may encounter challenging concepts, strong relationships with teachers can provide the encouragement and support necessary for academic success. Teachers who build trust and rapport with their students are better positioned to understand individual learning needs and tailor their instruction accordingly. Furthermore, classroom management influences both the cognitive and emotional dimensions of learning. Emmer and Sabornie (2015) highlight that effective management strategies not only promote orderly behaviour but also enhance students' cognitive engagement and emotional well-being. In Basic Science, where inquiry-based learning and critical thinking are essential, a well-managed classroom encourages students to explore scientific concepts without fear of failure or ridicule. This cognitive and emotional support fosters a growth mindset, motivating students to persist in their studies and achieve higher levels of academic performance.

Academic performance reflects the observable demonstration of knowledge, skills, and comprehension, signifying mastery of a subject (Klassen & Tze, 2014). It is an assessment of a student's competence and achievement in a specific school subject or skill. Fadipe (2000) notes that academic performance encompasses both the quality and quantity of internal and external outcomes, which reflect a student's preparedness and relevance in addressing societal needs (Eccles & Roeser, 2011). Achieving a particular grade in an examination indicates not only content mastery but also the ability to apply learnt knowledge to real-world situations. Because exam performance is a common measure of success, it becomes a critical indicator of the effectiveness of a student's learning experience. Various factors influence students' academic success, including personal characteristics, the learning environment, family background, and, importantly, teachers' management of the classroom during the learning process. Classroom management is a crucial factor that affects student outcomes and, by extension, the overall success of an educational system (McCormack, 2017). Joseph (2017) highlights factors that can enhance student performance and interest in subjects, particularly in STEM education. These factors, categorised into student and teacher factors, underscore the central role teachers play in students' learning and academic progression. Teacher competence is paramount, with self-efficacy significantly influencing students' psychological well-being, confidence, and self-esteem (McCormack, 2017). Effective classroom management, therefore, remains a critical driver of academic achievement, especially in science education.

The teacher consistently applies effective classroom management techniques to enhance student cooperation and engagement while minimising disruptions. This involves using routines and procedures that maximise instructional time, ensuring students understand expectations and manage disruptions to maintain a productive learning environment (Levin & Nolan, 2014). Effective planning, both long-term and short-term, supports student cooperation and fosters a classroom culture based on democratic values and processes. This approach encourages students' curiosity and intrinsic motivation to learn (Wong & Wong, 2009). By creating opportunities for students to develop independent, critical, and creative thinking skills, the teacher promotes a learning environment conducive to self-directed learning (Brophy, 2016). Clear communication of expectations and adequate time for task completion are crucial in ensuring students are actively engaged in their learning. This environment respects students' developmental needs and fosters positive expectations and mutual respect (Pianta et al., 2012). Emphasising cooperative efforts over individual competition through collaborative projects helps build a sense of team spirit and value among students (Stronge et al., 2011). Effective communication with students, parents, colleagues, and other stakeholders is essential for creating a positive learning experience. The teacher employs written, oral, and technological communication to engage stakeholders and support student learning (Epstein, 2011). Additionally, the teacher uses language to foster self-expression, identity development, and cultural awareness, encouraging students to respect and learn about diverse cultures (Banks & Banks, 2010).

Classroom management, as defined by Postholm (2013), involves deploying strategies to enhance student cooperation and mitigate disruptive behaviours, thereby sustaining a conducive learning environment. Disruptions can impede teaching and learning, negatively impacting both the learning atmosphere and students' opportunities (Emmer & Sabornie, 2015). Effective classroom management requires managing both physical and psychological elements, including classroom space, time, activities, and student behaviour (Wong & Wong, 2009). It involves the teacher's characteristics, skills, and competencies to foster a positive learning environment (Djigi & Stojiljkovi, 2011). Establishing clear rules and procedures is crucial for coordinating classroom activities, with rules designed to regulate student behaviour and procedures outlining teacher-permitted actions for effective learning (Brophy, 2016). Positive student-teacher interactions are essential for successful classroom management (Pianta et al., 2012). Effective classroom managers prepare the environment, establish rules, and maintain desirable behaviours (Erden, 2008). Teachers who experience frustration and helplessness due to discipline issues often feel unprepared for real-world classroom challenges despite extensive training (Postholm, 2013). Managing

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student behaviour is complex and requires skilled teachers (Emmer & Stough 2019), with a positive correlation between teachers' management tendencies and their effectiveness in the classroom (Turanlı & Yıldırım, 2007).

In the 21st-century classroom, teachers must adapt their knowledge and behaviours to act as facilitators, use appropriate resources, and manage multiple learning experiences to create a positive learning environment (Levin & Nolan, 2014). Classroom management encompasses the organisation and utilisation of human and material resources to achieve educational goals (Nwankwoala, 2018). Leadership, foresight, and insight are essential for effective classroom management. Classroom management involves directing actions and decisions to create a successful learning environment, positively impacting student performance (Emmer & Sabornie, 2015). This includes supervision, organisation, direction, control, and coordination of students' actions to meet educational objectives (Miech & Elder, 2016). Approaches like "assertive discipline" aim to establish an organised, teacher-directed environment to address discipline issues (Canter, 2016). Proactive strategy acquisition is crucial for avoiding discipline problems (Bromfield, 2015), while ongoing concerns about classroom management emphasise its critical role in teacher effectiveness (McCormack, 2017). Classroom management, as conceptualised by Martin and Sass (2010), involves teachers' actions to regulate classroom dynamics, student behaviour, and learning outcomes. This includes establishing order, addressing misbehaviour, delivering appropriate instruction, and attending to students' emotional and cognitive needs (Emmer & Stough, 2019). Shawer (2006) defined "assertive teachers" as those who use specific management strategies—such as organization, teaching management, teacher-student relationships, and a balanced approach to rewards and punishments—with clarity, positivity, consistency, and fairness. In contrast, less assertive teachers may struggle with effectively communicating their needs. Miech and Elder (2016) describe classroom management as the implementation of strategies to create a supportive environment for students' academic and socio-emotional learning. They outlined five key actions: developing supportive relationships, optimising instructional methods, encouraging student engagement, fostering social skills and self-regulation, and employing interventions for behavioural issues. These actions highlight the ongoing interaction between teachers and students essential for effective classroom management.

Effective classroom management also requires preparing the learning environment, establishing rules, organising and maintaining teaching practices, and managing teacher behaviours (Edwards, 2018). Teachers who face challenges in managing discipline often experience frustration and helplessness, underscoring the complexities of managing student behaviour (Miech & Elder, 2016). There is a positive correlation between teachers' management tendencies and their actual classroom practices (Bromfield, 2015). The responsibility for classroom management primarily rests with the teacher, who must efficiently organise and utilise human and material resources to achieve educational goals (Nwankwoala, 2018). Classroom management entails leadership, foresight, and insight, necessitating the identification and effective use of available resources. Bromfield (2015) argued that effective classroom management entails conducting instructional activities in a manner that maximally achieves educational objectives while considering classroom dynamics and available resources. Motivation is a critical aspect of teacher behaviour, significantly influencing classroom dynamics. Motivation is defined as a state that energizes, directs, and sustains behavior. It is characterized by goals that drive action and the effort needed to persist in activities (Edwards, 2018). Teacher motivation, which is linked to attitudes toward work, affects their engagement in pedagogical processes as well as their approach to student discipline and control (Ofoegbu, 2014). Consequently, teacher motivation plays a crucial role in their involvement in both academic and non-academic activities within the school setting.

A positive classroom climate, perceived by the teacher as safe, healthy, and supportive, correlates with increased teacher participation in management, administration, and overall school improvement (Bromfield, 2015). Motivation, derived from the Latin "movere," meaning to move, drives actions towards specific goals (Bromfield, 2015). Herzberg (2008) described motivation as the psychological process that awakens, guides and maintains actions towards achieving goals. Organisational efficiency, performance, and productivity are directly influenced by adequate motivation. When students are sufficiently motivated, their efficiency, performance, and productivity improve, leading to significant national growth and enhanced citizens' welfare (Judge & Klinger, 2008). Students' motivation encompasses internal and external factors influencing behaviour. Internal motivation involves individual needs and aspirations, while external motivation includes necessities like food, shelter, and benefits (Pink, 2009). Schools should prioritise meaningful work, recognition, and incentives to appropriately motivate students (Bromfield, 2015). Effective teacher behaviour in the classroom is critical for students' academic performance. Without positive classroom behaviour, indiscipline can disrupt teaching and learning. As a result, it is critical to examine how teachers' classroom behaviour impacts teaching and learning, as well as the performance of students in subjects such as Basic Science in Rivers State. Hence this study.

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Research Questions

1. Does teachers' classroom management influence student academic achievement in basic science?
2. How does teachers' attitude towards classroom management influence students' academic performance in Basic Science?
3. Do teachers' motivation strategies as a measure of classroom management influence students' academic performance in Basic Science?
4. Does the teacher's gender contribute to active classroom management strategies in basic science classes?

Hypotheses

H01: There is no significant relationship between a teacher's classroom management and students' academic achievement in basic science.
H02: There is no significant relationship between teachers' attitudes toward classroom management and students' academic achievement in basic science
H03: There is no significant relationship between teachers' motivation strategies and students' academic achievement in basic science
H04: There is no significant relationship between the teacher's gender and the effectiveness of classroom management in Basic Science classes

Methodology

The study used a descriptive survey design to investigate the impact of teacher classroom management, with a particular focus on teacher attitude and motivation as they affect students' performance in basic science. The study's population consisted of all the students in densely populated UBE public junior secondary schools in Rivers State. A sample size of two hundred (200) students was selected through stratified random sampling where the schools were stratified into two strata, the densely populated and the populated schools. Schools with student populations of 1000 or above are grouped as populated. From the two strata, ten junior secondary schools were randomly selected to constitute the schools that are actively involved. A random sampling technique was used to select twenty students from each selected secondary school, which gave a total of 200 participants. The study made use of a self-structured instrument known as the Teacher Classroom Management Questionnaire (TCMQ). The instrument consists of two main parts: section A, the teacher demographic data, and section B, the impact of teacher classroom management, which was further subdivided into 4 subsections that x-rayed the impact of teacher attitude and motivation as strategies to manage classroom optimisation and its influence on student's academic performance in basic science. The instrument was prepared on a modified 4-point Likert scale of strongly agree, agree, disagree, and strongly disagree. The instrument was validated for its face and content, while the reliability of $r = 0.8$ was established through Cronbach alpha. The generated data was analysed appropriately using the mean and standard deviation to answer the research questions and linear regression to test the null hypotheses to ascertain whether there is a relationship between teacher classroom management and students' academic achievement in basic science in secondary schools.

Results

Research Question 1: Does teachers' classroom management influence student academic achievement in Basic Science?

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Table 1: Mean and standard deviation on the effect of teachers' classroom management on students' academic achievement in basic science

S/N	Classroom management	SA	A	D	SD	Mean	SD	Decision
1	Teacher classroom management determines students' performance in the subject	21	21	7	1	3.24	0.77	**Accepted**
2	A teacher's ability to control his class students to follow up on the lesson	18	13	14	5	2.88	1.02	**Accepted**
3	Proper arrangement of the classroom setting facilitates students understanding	16	18	11	5	2.90	0.97	**Accepted**
4	A teacher's classroom gestures and prompts contribute to students' better understanding of the lesson	11	17	11	10	3.16	4.15	**Accepted**
5	The disciplinary nature of the teacher promotes students' understanding of the lesson	12	20	13	5	2.78	0.93	**Accepted**
	Grand mean					**2.99**	**0.93**	
	Criterion mean	**2.50**						

Table 1 shows the grand mean and responses of students on how effective classroom management contributes to their academic achievement in basic science. The data shows that teacher's classroom management was rated the highest contributor with a mean score of 3.24 ± 0.77. This was followed by the use of gestures and prompts by teachers, with a mean score of 3.16 ± 4.15. Proper classroom seating arrangement ranked next, with a mean score of 2.90 ± 0.97. The disciplinary nature of the teacher was rated the lowest in terms of contribution to academic achievement.

H01. There is no significant relationship between a teacher's classroom management and students' academic achievement in basic science.

Table 2 shows the relationship between teachers' classroom management and students' achievement.

Variables	N	Mean	S D	r	P	DECISION
Teachers' classroom Mgt	50	2.95	.933	.009	.949	Weak and inverse relationship
Performance	50	47.22	14.92			

Table 2 shows the mean and standard deviation of the relationship between teachers' motivation and students' performance (2.91±.46 and 47.22±14.92) respectively. The r=-.050 and p=.727. Since the P<0.05, the Ho1, that there is no significant relationship between teacher's classroom management and students' academic performance is rejected.

Research Question 2: How does teachers' attitude towards classroom management influence students' academic performance in Basic Science?

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Table 3: Mean and standard deviation on the influence of teachers' attitudes on students' academic achievement in basic science

S/N	TEACHERS ATTITUDE	SA	A	D	SD	Mean	SD	DECISION
1	A teacher's attitude is a determinant factor in teaching and learning	25	21	1	3	3.36	0.80	
2	The way the teacher behaves affects students learning	18	19	11	2	3.06	0.87	
3	Students are usually afraid of harsh teachers with bad attitude	19	10	19	2	2.92	0.97	
4	Students find it difficult to cope with a teacher who always shouts at them.	13	23	2	12	2.74	1.10	
5	Students learning has nothing to do with teachers' attitude	9	21	18	2	2.74	0.80	
6	Teachers' attitude makes students fear the subject.	20	14	8	8	2.92	1.10	
7	Teachers attitude towards the teaching makes it difficult to understand the subject	12	19	19	0	2.86	0.78	
8	Teacher's attitude makes students loss interest in the subject	16	13	11	10	2.70	1.13	
9	Students' performance is usually poor because of teachers' attitude	8	22	14	6	2.64	0.90	
10	Teachers attitude towards the subject makes me have interest in the subject	13	15	16	6	2.70	0.99	
	Grand mean					**2.86**	**0.38**	

Table 3 shows the grand mean and standard deviation on how teachers' attitude affects students' academic achievement (2.86±0.38). The major factors include the following factors that teacher attitude is a determinant to students' achievement (3.36±0.80), followed by the behaviour of the teacher (2.92±0.97) Teachers attitude of harshness creates fear in students(3.36±0.80)followed by loss of interest in the subject(3.36±0.80) followed by fear in students as a result of teachers bad attitude(3.36±0.80)However, the second group of respondents showed that teachers attitude makes them be interested in the subject (3.36±0.80) as well as does not contribute to their academic performance(3.36±0.80)

H02: There is no significant relationship between teachers' attitudes toward classroom management and students' academic achievement in basic science

Table 4 shows the relationship between teachers' attitudes and students' achievement.

Variables	N	Mean	S D	r	P	DECISION
Teachers Attitude	50	2.92	.46	-.024	.871	Weak and inverse
Performance	50	47.22	14.92			relationship

Table 4 shows the mean and standard deviation of the relationship between teachers' motivation and students' performance (2.92±.46 and 47.22±14.92) respectively. The r=-.024 and p=.871. Since the p>0.05 it means that there is no significant relationship between teachers' attitudes and students' academic achievement.

Research Question 3: Do teachers' motivation strategies as a measure of classroom management influence students' academic performance in Basic Science?

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Table 5: Mean and standard deviation on the effect of teachers' motivation strategies on students' academic performance in basic science

S/N		SA	A	D	SD	Mean	SD	Decision
1	Motivation is a strong driver in students' learning of science	18	15	11	6	2.90	1.04	
2	A teacher who motivates the students will always have students perform very well	15	16	16	3	2.86	0.93	
3	A teacher's encouragement motivates the students to do well in the subject	12	17	16	5	2.72	0.95	
4	Students sometimes get energy from the teachers' encouragement to get good grades	21	21	5	3	3.20	0.86	
5	With or without teachers' motivation, a student will always do better academically	22	15	10	3	3.12	0.94	
6	Teachers' motivation makes me interested in science	17	9	16	8	2.70	1.11	
	Grand mean					**2.92**	**0.47**	

Table 5 shows the rating of teachers teaching methods as a factor to students' academic achievement. The grant means and standard deviation (2.92±0.55) indicated that teachers' teaching method contributes to students' academic achievement in basic science. The teaching method adopted by the science teacher affects the achievement of the students (3.10±0.84) followed by when appropriate teaching method is used, student grasp of the lesson is increased (3.02±1.02) while the least is that when a teacher uses a wrong teaching method it makes the students have low retention (2.62±0.85).

H03: There is no significant relationship between teachers' motivation strategies and students' academic achievement in basic science

Table 6 shows the relationship between teachers' motivation and students' achievement.

Variables	**N**	**Mean**	**S D**	**R**	**P**	**DECISION**
Teachers' motivation	50	2.91	.46	-.050	.729	Weak and
Performance	50	47.22	14.92			inverse relationship

Table 6 shows the mean and standard deviation of the relationship between teachers' motivation in classroom management and students' performance (2.91±.46 and 47.22±14.92) respectively. The r=-.050 and p=.727. Since the p>0.05 it means that there is no significant relationship between teachers' attitude in classroom management and students' academic achievement.

Research Question 4. Does the teacher's gender contribute to active classroom management strategies in basic science classes?

Table 7 shows the mean and standard deviation of teachers' gender in classroom management in basic science.

	Gender	**N**	**Mean**	**SD**
Classroom Management	Male	22	2.83	0.34
	Female	28	2.89	0.41

Table 7 shows the role of gender in classroom management. The table revealed that females (2.87±0.41) manage the classroom more than their male counterparts (2.83±0.34).

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H04: There is no significant relationship between the teacher's gender and the effectiveness of classroom management in Basic Science classes.

Table 8 shows the t. test of teachers' gender and students' academic achievement

Gender	N	Mean	SD	Df	t	p
Male	22	2.83	0.34	48	,606	.547
Female	28	2.89	0.41			

The result from Table 8 shows the independent sample t-test on the difference in the impact of gender in classroom management. The mean and SD of male teachers was 2.83±0.34 while the mean and SD of the female counterpart was 2.89±0.41. However, the t-cal was .606 with df=48 and p=.0.547. Since the P value= 0.547 > the alpha level of 0.05, the (Ho7) There is no significant difference between the impact of teachers' gender in classroom management and student's academic achievements in Basic Science is retained

Discussion

The findings from this study provide a comprehensive understanding of the various factors affecting students' academic achievement in basic science, particularly emphasising the roles of classroom management, teachers' attitudes, motivation, teaching methods, and gender. The results indicate that teachers' classroom management practices are perceived as the most significant contributors to students' academic achievement. Effective classroom management is essential in creating a structured learning environment that minimises disruptions and promotes engagement. According to Evertson and Weinstein (2013), effective classroom management strategies foster an atmosphere conducive to learning where students feel secure and supported. The use of gestures and prompts by teachers also emerged as a critical factor, reinforcing the importance of interactive teaching techniques that engage students and facilitate understanding (Cohen et al., 2009). Interestingly, proper seating arrangements ranked third in contributing to academic success, suggesting that physical classroom organisation can influence student interactions and learning outcomes. Research indicates that classroom layout can affect students' engagement and collaboration, further emphasising the need for thoughtful classroom design (Marx et al., 2015). In contrast, the disciplinary nature of teachers was rated the lowest, which may indicate that overly strict disciplinary measures can create a negative learning environment, potentially hindering student performance.

The data also reveal a complex relationship between teachers' motivation and students' performance. The lack of significant correlation suggests that while teachers' motivation is vital, it may not directly translate into improved academic outcomes for students. This finding aligns with existing literature, which posits that teacher motivation must be complemented by effective teaching strategies and classroom management practices to yield positive results (Ryan & Deci, 2000). Moreover, the findings regarding teachers' attitudes highlight their crucial role as determinants of students' academic success. Positive teacher attitudes can inspire and engage students, while negative attitudes, such as harshness, may induce fear and disengagement (Hattie, 2009). The dual perspectives from different respondent groups suggest that while some students may feel discouraged by negative teacher attitudes, others might still find motivation and interest in the subject matter, highlighting the subjective nature of student experiences. Regarding teaching methods, the results underscore their significance in influencing students' academic achievement. Appropriate teaching methods enhance students' grasp of the lesson, reinforcing the notion that instructional strategies directly impact learning outcomes. Research supports the idea that varied and adaptive teaching methods cater to diverse learning needs and foster deeper understanding (Tomlinson, 2014). Conversely, ineffective teaching methods can lead to poor retention of knowledge, emphasising the need for teachers to employ evidence-based instructional strategies. The gender analysis revealed slight differences in classroom management practices between male and female teachers, though these differences were not statistically significant. This finding suggests that while female teachers may employ slightly different strategies or approaches, the overall impact on student achievement is similar across genders. Previous research has shown that gender can influence teaching styles and classroom dynamics, but the current findings indicate that both male and female teachers can be equally effective when it comes to classroom management (Eagly & Karau, 2002).

Conclusion

The results of this study highlight the critical role of classroom management in shaping students' academic achievement in basic science. Effective classroom management emerged as the foremost contributor to student

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success, indicating that a structured and supportive learning environment is essential for enhancing student engagement and minimising disruptions. Furthermore, teachers' attitudes towards classroom management significantly influence students' perceptions and motivation, highlighting the importance of fostering positive relationships in educational settings. While teacher motivation itself showed a negligible direct correlation with student performance, it remains crucial for creating an inspiring and dynamic classroom atmosphere.

Recommendations

Based on the result of the study, it is pertinent that we make the following recommendations:

1. Schools should invest in comprehensive professional development programs that focus on effective classroom management techniques because they have a relationship with students' academic success.
2. Traditional punitive measures should be discouraged and rather replaced with approaches that foster a positive environment that would promote a positive learning atmosphere to reduce fear and anxiety, leading to better academic performance and student well-being.
3. Teachers should be encouraged to always adopt positive attitudes and behaviours that foster supportive relationships with students because of their impact on students' academic successes.
4. Teachers should actively create a classroom environment where students feel acknowledged and rewarded for their efforts, which can enhance their engagement and performance in science subjects.

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