ACADEMIA International Journal for Social Sciences
Volume 5, Issue 3(s5), 2026 ISSN-L (Online): 3006-6638

Teacher–Student Interaction and Learning Motivation among Secondary School Students: Evidence from Pakistan

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Received: 13-02-2026 **Revised:** 28-02-2026 **Accepted:** 16-03-2026 **Published:** 30-03-2026

ABSTRACT

Teacher–student interaction plays a pivotal role in shaping students' academic engagement and motivation, particularly during secondary education. This study examined the relationship between teacher–student interaction and students' learning motivation in secondary schools in Lahore, Pakistan. A quantitative, descriptive correlational research design was employed. The study sample comprised 400 Grade 9 and 10 students selected through multistage stratified random sampling from two public and two private secondary schools. Data were collected using adapted versions of the Teacher–Student Relationship Scale (TSRS) and the Student Learning Motivation Scale (SLMS), both employing a five-point Likert scale. Descriptive statistics, Pearson's correlation, linear regression, and independent-samples t-tests were used to analyze the data.The findings indicated that students generally perceived teacher–student interaction positively, with classroom communication receiving the highest ratings, whereas teacher feedback and guidance emerged as the weakest dimension. Students also reported a high level of learning motivation, particularly in terms of academic effort. Pearson's correlation analysis revealed a moderate, positive, and statistically significant relationship between teacher–student interaction and learning motivation. Regression analysis further demonstrated that teacher–student interaction significantly predicted students' learning motivation. Additionally, significant differences were observed across gender and school sector, with female students and those enrolled in private schools reporting higher levels of learning motivation than their counterparts.The study concludes that supportive teacher–student interaction, characterized by effective communication, teacher care, constructive feedback, and a positive classroom environment, is an important determinant of students' learning motivation. The findings highlight the need for professional development initiatives that strengthen teachers' interpersonal and instructional competencies to foster motivating learning environments in secondary schools.

Keywords: *Teacher–student interaction; learning motivation; secondary education; teacher support; classroom communication*

INTRODUCTION

Teacher–student interaction is widely recognized as a fundamental component of effective teaching and learning. Beyond transmitting knowledge, teachers shape students' academic experiences through communication, emotional support, feedback, and classroom relationships. Positive interactions foster a supportive learning environment in which students feel respected, valued, and encouraged to participate

actively in learning. Such interactions have consistently been associated with improved academic engagement, well-being, and educational achievement (Roorda et al., 2011). Among secondary school students, who are undergoing significant cognitive, emotional, and social development, supportive teacher–student relationships are particularly important for sustaining learning motivation.

Learning motivation is a key determinant of students' academic success because it influences their willingness to engage in classroom activities, persist in challenging tasks, and achieve educational goals. According to Self-Determination Theory (Deci & Ryan, 2000), students are more likely to develop intrinsic motivation when their basic psychological needs for autonomy, competence, and relatedness are fulfilled. Teachers play a central role in satisfying these needs by creating positive classroom climates, providing constructive feedback, encouraging participation, and developing trusting relationships with students. Consequently, classrooms characterized by positive teacher–student interaction tend to promote higher levels of student engagement, persistence, and academic achievement.

A growing body of international research demonstrates that supportive teacher–student interaction is positively associated with students' motivation, academic engagement, and psychological well-being. Students who perceive their teachers as caring, approachable, and respectful report greater interest in learning, stronger academic self-concept, and higher educational aspirations (Opdenakker et al., 2012; Raufelder et al., 2012). Conversely, limited communication, inadequate teacher support, and negative classroom relationships contribute to disengagement, reduced motivation, and poorer academic outcomes. These findings highlight that effective teacher–student interaction extends beyond instructional practices and represents an essential element of quality education.

Despite substantial international evidence, contextual differences in educational systems warrant further investigation, particularly in developing countries where classrooms are often characterized by large class sizes, limited educational resources, and teacher-centered instructional practices. Such conditions frequently restrict opportunities for meaningful teacher–student interaction, thereby reducing students' motivation and engagement. In South Asian countries, including Pakistan, these challenges are further compounded by examination-oriented teaching, heavy curricular demands, and insufficient emphasis on interpersonal aspects of teaching. Although educational reforms have primarily focused on curriculum and assessment, comparatively little attention has been given to strengthening teacher–student relationships as a mechanism for improving learning outcomes.

In Pakistan, empirical research examining the relationship between teacher–student interaction and learning motivation at the secondary school level remains limited. Most existing studies have focused on academic achievement, classroom management, or instructional practices, while comparatively few have investigated how students' perceptions of teacher interaction influence their motivation to learn. Furthermore, evidence comparing public and private secondary schools within the Pakistani context remains scarce. Given that secondary education represents a critical stage in students' academic development and career preparation, understanding the role of teacher–student interaction in promoting learning motivation is both educationally and practically significant.

Grounded in Self-Determination Theory, the present study addresses this gap by examining the relationship between teacher–student interaction and students' learning motivation among secondary school students in Lahore, Pakistan. Specifically, the study investigates students' perceptions of teacher–student interaction, assesses their level of learning motivation, explores the relationship between these constructs, and examines differences based on gender and school sector. The findings are expected to contribute to the growing literature on teacher–student relationships in developing educational contexts and provide evidence to inform teacher professional development, classroom practices, and educational policy aimed at fostering more motivating and supportive learning environments.

Statement of the Problem

Learning motivation is a critical determinant of students' academic engagement, persistence, and achievement. Although numerous factors influence students' motivation, teacher–student interaction has consistently been identified as one of the most influential classroom variables. Positive interactions characterized by effective communication, emotional support, constructive feedback, and mutual respect foster students' motivation and engagement, whereas poor teacher–student relationships may lead to disengagement, low academic interest, and reduced learning outcomes. Despite growing international evidence supporting the importance of teacher–student interaction, empirical findings remain limited and context-specific, particularly in developing countries.

In Pakistan, educational reforms have largely focused on curriculum development, assessment practices, and teacher qualifications, while comparatively little attention has been paid to the interpersonal dimension of teaching. Existing studies have primarily examined teacher effectiveness, classroom management, or academic achievement, with relatively few investigating how teacher–student interaction influences students' learning motivation at the secondary school level. Moreover, limited evidence is available regarding differences in teacher–student interaction and learning motivation across public and private secondary schools or between male and female students. This lack of empirical evidence restricts educators' and policymakers' ability to design interventions that strengthen classroom relationships and enhance students' motivation to learn.

Addressing this gap, the present study investigates the relationship between teacher–student interaction and students' learning motivation among secondary school students in Lahore, Pakistan. By examining the predictive role of teacher–student interaction and exploring variations across gender and school sector, the study provides evidence that may assist teachers, school leaders, and policymakers in developing supportive classroom environments that promote students' motivation and educational success.

Research Questions

1. What is the relationship between teacher interaction and student learning motivation among secondary school students?

2. Is there a significant difference in teacher–student interaction and students' learning motivation between male and female secondary school students?

3. Is there a significant difference in teacher–student interaction and students' learning motivation between public and private sector secondary school students?

LITERATURE REVIEW

Teacher–student interaction has long been recognized as a fundamental component of effective teaching and learning. It encompasses the quality of communication, emotional support, instructional guidance, feedback, and interpersonal relationships that teachers establish with their students. Research suggests that positive teacher–student interaction promotes a supportive classroom environment, enhances students' sense of belonging, and facilitates both academic and socio-emotional development (Hamre & Pianta, 2006; Pianta et al., 2008). In secondary education, where students experience significant cognitive and emotional changes, supportive teacher–student relationships become particularly important for maintaining academic engagement and learning motivation (Eccles et al., 1993).

Learning motivation refers to the internal and external processes that initiate, direct, and sustain students' engagement in learning activities (Schunk et al., 2014). According to Self-Determination Theory (SDT), students are more likely to develop intrinsic motivation when their basic psychological needs for autonomy, competence, and relatedness are fulfilled (Ryan & Deci, 2020). Teachers play a central role in satisfying these needs by providing meaningful feedback, encouraging student participation, respecting students' perspectives, and creating emotionally supportive classrooms. Consequently, classrooms characterized by positive teacher–student interaction are more likely to promote persistence, academic engagement, and higher educational achievement.

A substantial body of empirical research has established a positive relationship between teacher–student interaction and students' motivation. In a comprehensive meta-analysis of 99 studies, Roorda et al. (2011) reported that positive teacher–student relationships significantly predicted students' engagement, motivation, and academic achievement across educational levels. Similarly, Wentzel (2010) found that students who perceived their teachers as caring, fair, and supportive demonstrated higher levels of academic motivation and classroom participation. These findings indicate that teacher–student interaction extends beyond instructional delivery and functions as an important motivational resource.

Several theoretical perspectives explain the relationship between teacher–student interaction and learning motivation. Self-Determination Theory (Ryan & Deci, 2020) argues that supportive teacher behaviors satisfy students' psychological needs for autonomy, competence, and relatedness, thereby strengthening intrinsic motivation. Likewise, Social Cognitive Theory (Bandura, 1997) emphasizes that teachers influence students' motivation through modeling, verbal encouragement, constructive feedback, and the development of self-efficacy beliefs. Students who receive positive feedback and encouragement are more likely to believe in their academic capabilities, persist in challenging tasks, and exhibit stronger motivation to learn.

The quality of teacher–student interaction is reflected through multiple dimensions, including classroom communication, emotional support, instructional guidance, classroom organization, and constructive feedback (Pianta et al., 2008). Among these, effective classroom communication has consistently emerged as one of the strongest predictors of student engagement. Teachers who encourage discussion, ask higher-order questions, and provide opportunities for active participation create learning environments that stimulate curiosity and motivation (Hattie, 2009). Similarly, timely and constructive feedback helps students recognize their strengths, identify areas for improvement, and develop confidence in their academic abilities (Hattie & Timperley, 2007).

Emotional support also plays a critical role in promoting learning motivation, particularly during adolescence. Hamre and Pianta (2006) argued that emotionally supportive teachers foster students' sense of security, belonging, and confidence, which enhances both academic engagement and persistence. Hughes and Kwok (2007) further demonstrated that emotionally positive teacher–student relationships predict higher academic motivation even after controlling for prior achievement and family background. Recent evidence likewise suggests that teacher responsiveness and emotional warmth remain among the strongest predictors of students' intrinsic motivation (Deng, 2024).

Research has further shown that teacher autonomy support enhances students' intrinsic motivation and self-regulated learning. When teachers provide meaningful choices, explain the relevance of learning activities, and encourage independent thinking, students become more engaged and motivated to learn (Jang et al., 2010; Reeve, 2009). Likewise, enthusiastic teaching and positive teacher modeling stimulate students' interest and encourage greater academic persistence (Frenzel et al., 2009).

Although international evidence consistently supports the positive influence of teacher–student interaction on learning motivation, comparatively fewer studies have examined this relationship within developing countries. In Pakistan, most educational research has focused on academic achievement, instructional practices, or classroom management, while limited attention has been given to interpersonal classroom relationships as determinants of student motivation. Existing Pakistani studies nevertheless indicate that supportive teacher–student interaction positively predicts students' academic motivation and engagement (Ahmed, 2022; Malik et al., 2020; Nawaz & Aslam, 2021). However, empirical evidence remains limited regarding differences across public and private schools and between male and female students, particularly at the secondary school level.

The reviewed literature consistently demonstrates that teacher–student interaction is a multidimensional construct that significantly influences students' learning motivation through communication, emotional support, instructional guidance, and autonomy support. Nevertheless, the scarcity of empirical evidence from Pakistani secondary schools highlights the need for further investigation. The present study addresses this gap by examining the relationship between teacher–student interaction and students' learning motivation among secondary school students in Lahore, thereby contributing context-specific evidence to the existing body of educational research.

Research Design

This study employed a quantitative research approach using a descriptive correlational research design to examine the relationship between teacher–student interaction and students' learning motivation in secondary schools. A correlational design was considered appropriate because it enabled the investigation of the direction and strength of the association between the two variables without manipulating the study environment. Data were collected through a structured questionnaire comprising adapted versions of the Teacher–Student Relationship Scale (TSRS) and the Student Learning Motivation Scale (SLMS), both measured on a five-point Likert scale. The collected data were analyzed using descriptive statistics, Pearson's product–moment correlation, linear regression, and independent-samples *t*-tests to address the research objectives and test the study hypotheses.

Sample and Sampling Technique

The study sample consisted of 400 Grade 9 and Grade 10 students enrolled in secondary schools in Lahore, Pakistan. Participants were drawn from four secondary schools, comprising two public and two private institutions. To ensure balanced representation across school sectors, 200 students were selected from public schools and 200 from private schools, with 100 participants recruited from each school.

A multistage sampling procedure was employed to select the participants. In the first stage, four secondary schools were purposively selected based on their willingness to participate and to ensure representation of both public and private school sectors. In the second stage, **stratified** was used to select students within each school. Students were first stratified by gender, and participants were then randomly selected from each stratum using the class attendance lists as the sampling frame. This procedure ensured adequate representation of both male and female students while minimizing selection bias. The combination of purposive school selection and random selection of students enhanced the representativeness of the sample and strengthened the validity of the study findings.

Research Instruments

Data were collected using a structured questionnaire comprising three sections: demographic information, the Teacher–Student Relationship Scale (TSRS), and the Student Learning Motivation Scale (SLMS). All

questionnaire items were measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).The Teacher–Student Relationship Scale (TSRS) was adapted from the Student–Instructor Relationship Scale (SIRS) developed by Creasey et al. (2009). The adapted instrument assessed four dimensions of teacher–student interaction: teacher support and care, classroom communication, teacher feedback and guidance, and classroom environment. Students' learning motivation was measured using the Student Learning Motivation Scale (SLMS), adapted from the instrument developed by Conradty and Bogner (2022). The scale comprised four dimensions: intrinsic motivation, extrinsic motivation, academic effort, and persistence and confidence. The first section of the questionnaire collected demographic information, including students' gender, age, grade level, and school sector (public or private). These variables were used to describe the study sample and examine differences in teacher–student interaction and learning motivation across participant characteristics.

Validity and Reliability of the Instruments

The validity of the research instruments was established through content validity. The adapted questionnaire was reviewed by experts in educational research and measurement from the University of the Punjab, Lahore, to assess the relevance, clarity, and appropriateness of the items in relation to the study objectives. Based on their comments and recommendations, revisions were made to improve the wording, organization, and overall quality of the questionnaire before its administration. Prior to the main data collection, **a** pilot study was conducted with 30 secondary school students **selected** from two government secondary schools in Lahore. The purpose of the pilot study was to examine the clarity of the questionnaire items, identify potential ambiguities, and assess the internal consistency of the instruments. Feedback obtained during the pilot testing resulted in minor modifications to improve the readability and comprehensibility of several items.

The internal consistency of the instruments was assessed using Cronbach's alpha coefficient. The Teacher–Student Interaction Scale demonstrated good internal consistency, with an overall Cronbach's alpha of **.811**, indicating a high level of reliability. The subscales yielded acceptable reliability coefficients, ranging from **.750 to .810**, suggesting satisfactory consistency across the dimensions of teacher support and care, classroom communication, teacher feedback and guidance, and classroom environment.

Similarly, the Students' Learning Motivation Scale demonstrated acceptable internal consistency, with an overall **Cronbach's alpha of** .708. The reliability coefficients of its subscales ranged **from** .690 to .720**,** indicating satisfactory reliability for measuring intrinsic motivation, extrinsic motivation, academic effort, and persistence and confidence. Although the reliability coefficient for the extrinsic motivation subscale (.690) was slightly below the conventional threshold of .70, it remained acceptable for an adapted instrument used in exploratory educational research.

Overall, the reliability analysis indicated that both instruments possessed satisfactory internal consistency and were appropriate for measuring teacher–student interaction and students' learning motivation among secondary school students. Therefore, the instruments were considered suitable for use in the main study.

RESULTS AND DISCUSSION

Research Question: What is the relationship between teacher interaction and student learning motivation among secondary school students?

Table 1: Correlation between variables

		Teacher Student interaction	learning motivation
Teacher student interaction	**Pearson Correlation**	1	.487
	Sig. (2-tailed)		.000
	N	400	400
Student learning motivation	**Pearson Correlation**	.487	1
	Sig. (2-tailed)	.000	
	N	400	400
Correlation is significant at the 0.01 level (2-tailed).			

Pearson's product–moment correlation analysis was conducted to examine the relationship between teacher–student interaction and students' learning motivation among secondary school students. The analysis revealed a moderate positive correlation between teacher–student interaction and learning motivation ($r = .487$, $p < .001$, $N = 400$). The correlation coefficient indicates that students who perceived more positive interactions with their teachers also reported higher levels of learning motivation.The relationship was statistically significant at the .01 level, suggesting that the observed association was unlikely to have occurred by chance. The positive direction of the correlation implies that improvements in teacher–student interaction—such as effective classroom communication, teacher support and care, constructive feedback, and a positive classroom environment—are associated with increased levels of students' motivation to learn.Although the correlation is moderate rather than strong, it demonstrates that teacher–student interaction is an important factor related to students' learning motivation. These findings suggest that fostering positive interpersonal relationships between teachers and students may contribute to enhancing students' academic engagement and motivation in secondary school settings.

Research Question: Is there a significant difference in teacher–student interaction and students' learning motivation between male and female secondary school students

Table 2: Independent sample t- test regarding gender difference

Gender	N	Mean	Std. D	T	df	p-value
Male	231	3.8513	.53700	-.920	398	.034
Female	167	3.8988	.46624			

An independent-samples *t*-test was conducted to examine whether teacher–student interaction and students' learning motivation differed by gender. The results indicated a statistically significant difference between male and female students ($p = .034$). Female students (M = 3.90, SD = 0.47) reported slightly higher levels of teacher–student interaction and learning motivation than male students (M = 3.85, SD = 0.54).Although the mean difference between the two groups was relatively small, the findings suggest that gender may influence students' perceptions of teacher–student interaction and their motivation to learn. Specifically, female students appeared to perceive more positive interactions with their teachers and demonstrated slightly higher learning motivation than their male counterparts. This finding may reflect differences in classroom engagement, responsiveness to teacher support, or communication patterns between male and female students.The results indicate that gender is associated with variations in teacher–student interaction and learning motivation among secondary school students. These findings underscore the importance of adopting inclusive teaching practices that effectively support the motivational needs of both male and female students.

Research Question: *Is there a significant difference in teacher–student interaction and students' learning motivation between public and private sector secondary school students*

Table 3: Independent sample t- test regarding institution difference

Department	N	Mean	Std. Deviation	t	Df	p-value
Public	200	3.8298	.57790	-1.574	398	.000
Private	200	3.9095	.42380			

An independent-samples *t*-test was conducted to examine whether teacher–student interaction and students' learning motivation differed between public and private secondary school students. The results revealed a statistically significant difference between the two groups ($p < .001$). Students enrolled in private secondary schools (M = 3.91, SD = 0.42) reported slightly higher levels of teacher–student interaction and learning motivation than students enrolled in public secondary schools (M = 3.83, SD = 0.58).Although the difference in the mean scores was relatively modest, the findings indicate that the school sector is associated with students' perceptions of teacher–student interaction and their learning motivation. The higher mean score reported by private school students suggests that they may experience more supportive teacher–student relationships, effective classroom communication, constructive feedback, and learning environments that foster greater motivation. In contrast, the comparatively lower mean score among public school students may reflect contextual challenges such as larger class sizes, limited instructional resources, or fewer opportunities for individualized teacher support. The findings suggest that the type of school attended influences students' educational experiences, particularly in relation to teacher–student interaction and learning motivation. These results highlight the importance of strengthening interpersonal teaching practices and creating supportive classroom environments across both public and private secondary schools to promote students' motivation and engagement in learning.

DISCUSSION

The present study examined the relationship between teacher–student interaction and students' learning motivation among secondary school students and further explored whether these variables differed by gender and school sector. The findings provide important insights into the role of teacher–student interaction in shaping students' motivation to learn.The first major finding revealed a moderate positive and statistically significant relationship between teacher–student interaction and students' learning motivation ($r = .487$, $p < .001$). This indicates that students who perceived their interactions with teachers as more supportive, communicative, and constructive tended to report higher levels of motivation toward learning. The finding is consistent with Self-Determination Theory, which emphasizes that students become more motivated when their psychological needs for relatedness, competence, and autonomy are fulfilled. Positive teacher–student interaction may satisfy these needs by providing emotional support, meaningful feedback, and opportunities for active classroom participation. The result also aligns with previous research by Roorda et al., Wentzel, and Hamre and Pianta, who reported that supportive teacher–student relationships are associated with greater student engagement, academic persistence, and motivation. Although the correlation found in the present study was moderate rather than strong, it nevertheless suggests that teacher–student interaction is an important factor influencing students' learning motivation alongside other personal, family, and school-related factors.

The second finding indicated a statistically significant gender difference in teacher–student interaction and learning motivation ($p = .034$). Female students reported slightly higher mean scores (M = 3.90) than male students (M = 3.85). While the magnitude of the difference was relatively small, the result suggests that female students may perceive teacher support and classroom interaction more positively and may exhibit slightly higher motivation toward learning. This finding is comparable to studies by Meece, Glienke, and

Burg, which suggested that female students often demonstrate higher levels of intrinsic motivation and may be more responsive to emotional support from teachers. The finding may also reflect differences in classroom behavior, communication styles, and engagement patterns between male and female students. Female students may be more likely to seek academic support, respond to teacher feedback, and maintain positive relationships with teachers, which in turn can enhance their motivation. Nevertheless, because the difference was small, the results imply that effective teacher–student interaction is beneficial for both male and female students, highlighting the need for inclusive teaching practices that address the motivational needs of all learners.

The third finding showed a significant difference between public and private secondary school students, with students from private schools reporting higher levels of teacher–student interaction and learning motivation (M = 3.91) than students from public schools (M = 3.83). This result suggests that the school sector may influence students' perceptions of classroom interaction and their motivation to learn. Private schools may provide conditions that facilitate more positive teacher–student relationships, such as smaller class sizes, closer teacher supervision, greater parental involvement, and more supportive learning environments. In contrast, public schools often face challenges including larger classrooms, limited resources, and heavier teacher workloads, which can reduce opportunities for individualized interaction and feedback. The finding is consistent with research conducted in developing-country contexts, which has shown that school resources and classroom conditions can significantly affect the quality of teacher–student interaction and student motivation.he findings of this study reinforce the view that teacher–student interaction is a crucial element of students' educational experiences. Students who experience supportive communication, teacher care, constructive feedback, and a positive classroom environment are more likely to develop stronger motivation toward learning. The study further suggests that gender and school sector are associated with variations in these experiences, although the observed differences were relatively modest. These results have important implications for teachers, school administrators, and policymakers. Efforts to improve classroom communication, teacher responsiveness, feedback practices, and the overall classroom climate may contribute to enhancing students' motivation and engagement in learning across both public and private secondary schools.

CONCLUSION

The findings of this study demonstrate that teacher–student interaction is positively associated with students' learning motivation among secondary school students. Students who experienced supportive communication, constructive feedback, teacher care, and a positive classroom environment reported higher levels of learning motivation. The study also found significant differences based on gender and school sector, with female students and those enrolled in private schools exhibiting slightly higher levels of teacher–student interaction and learning motivation. These findings highlight the importance of fostering positive teacher–student relationships to enhance students' academic engagement and motivation. Therefore, schools should encourage teachers to adopt supportive and student-centered instructional practices that promote meaningful classroom interactions and create motivating learning environments for all students.

RECOMMENDATIONS

Following recommendations are proposed

1. Teachers should foster positive teacher–student relationships by promoting effective classroom communication, demonstrating empathy, and providing constructive feedback to enhance students' learning motivation.

2. School administrators should organize regular professional development programs that strengthen teachers' interpersonal, communication, and student-centered instructional skills to improve the quality of teacher–student interaction.

3. Public secondary schools should implement strategies to create more supportive and engaging classroom environments, particularly by encouraging individualized teacher support and timely academic guidance to enhance students' motivation.

4. Teachers should adopt inclusive instructional practices that address the motivational needs of both male and female students, ensuring equitable opportunities for participation, encouragement, and academic support.

5. Educational policymakers should incorporate teacher–student relationship building into teacher education curricula and in-service training programs, recognizing its role in improving students' motivation and engagement.

6. Future research should examine additional factors influencing students' learning motivation, such as parental involvement, classroom climate, teacher self-efficacy, peer relationships, and school leadership, using larger and more diverse samples from different regions of Pakistan.

7. Longitudinal and mixed-methods studies are recommended to provide a deeper understanding of how teacher–student interaction influences students' learning motivation over time and across different educational contexts.

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