

## THE INFLUENCE OF TEACHER-STUDENT RELATIONSHIPS ON STUDENT ENGAGEMENT: A SYSTEMATIC LITERATURE REVIEW USING HISTCITE

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### Abstract

Examining the effects of student-teacher relationships on engagement and achievement in the classroom is the overarching goal of this research. A thorough comprehension of the relationship between student engagement and teacher-student interactions is the overarching goal of this research. In addition, it hopes to encourage teachers to learn more about the topic and academics to perform more research so they can provide other viewpoints and treatments. HistCite presents a literature evaluation based on the Web of Science to offer an analysis of the relationship between student involvement and teacher-student interactions. This collection included 508 papers after screening and augmentation. The sample of 508 publications used for this research was culled from the Web of Science core collection database and published between 1997 and 2024. The literature's pertinent relationships and knowledge structures were categorized in this study using bibliometric analyses and network scores. Trends in researching student involvement and teacher-student interactions are shown by the study's results. Using the sources and analysis as a foundation, this paper proposes three potential future research directions for this area. In addition, the findings show that there are strong connections between teacher-student relationships and student engagement, that these relationships have an effect on both students' and teachers' personal growth and happiness, and that in the end, the causes of these relationships are revealed. Both theoretically and pragmatically, this study's use of technology highlights the literature's correlation and lays out a clear path for future research. The impact of teacher-student interactions on student engagement is examined in this study in great detail. Moreover, practitioners may be able to identify broad trends in this research that can inform future studies on student engagement.

**Keywords:** teacher-student relationships; student engagement; systematic literature review; Histcite

### 1. Introduction

The quality of teacher-student interaction significantly shapes students' educational experiences. Within the realm of education, this connection extends beyond mere information exchange; it is crucial for establishing an environment conducive to student learning. Roorda, Koomen, Spilt, & Oort (2011) observed that educational research has recognized the significance of established positive teacher-student relationships in

promoting student engagement. The study conducted by Fredricks, Blumenfeld, and Paris (2004) suggests that involvement, encompassing behavioural, emotional, and cognitive dimensions, has a significant impact on academic progress and overall well-being.

Student engagement has been consistently linked to several positive educational outcomes, including increased academic performance, better school attendance, and enhanced student motivation (Skinner & Belmont, 1993; Wang & Holcombe, 2010). Nevertheless, engagement does not occur in isolation; instead, it is significantly influenced by the manner in which students interact with and establish connections with their teachers (Cornelius-White, 2007). Establishing and maintaining relationships can influence students' level of engagement, apathy, and probability of discontinuing their education (Klem & Connell, 2004). Conversely, positive and encouraging interactions can motivate students to actively participate in their academic pursuits.

The present study conducted a systematic literature search using HistCite™ Pro version 2.1 to examine the existing research on the influence of teacher-student interactions on student engagement. Drawing upon the identified deficiencies in pertinent systematic literature studies, we assessed the correlation between focus, reference, and development. This post will provide a more detailed explanation of the distribution shown below.

## **2. Research Methodology**

### **2.1 HistCite™**

HistCite™ was developed by Eugene Garfield and his colleagues in 2001. It was officially launched in 2007 as a robust tool for doing bibliometric research and visualising digital data. The main objective of this tool is to assist academics in studying a specific subject by identifying pivotal works that have influenced the body of scholarly work in that discipline (Garfield, 2009). Updates 2.0 and 2.1 of Histcite™ pro were subsequently created to improve the functionality of the software. Subsequent refinements of the software's launch technique included the implementation of a system for automatically retrieving raw data from WoS (Wu & Tsai, 2022). Notwithstanding the absence of assistance, the software has developed into a powerful tool for bibliometric analysis (Garfield, 2009).

Through the compilation of citation data from sources such as the Web of Science, HistCite™ generates citation maps that visually represent the connections and impacts of research papers published throughout different periods. The Local Citation Score (LCS) quantifies the number of citations a document derives from other documents within the same dataset. On the other hand, the Global Citation Score (GCS) represents the total number of citations received by any document indexed in a larger database, such as Web of Science (Garfield, Pudovkin, & Istomin, 2003). By assisting scholars in identifying publications that are significant both globally and within their field, these measures facilitate their understanding of the dynamics of academic research (Garfield & Pudovkin, 2004).

### **2.2. Keywords Search**

In the current literature, scholars use the terms "student involvement" or "academic engagement" to replace "student engagement", and the terms "teacher-student relationships" is replaced by "teacher-child relationships" or "teacher-pupils' relationships". The study searched the Web of Science (WoS) for the phrases "student

engagement," "teacher-student relationship," and "academic engagement" after investigating numerous cases.

The search is limited to English articles in the Web of Science Core Collection, including the following citation indexes: Social Sciences Citation Index (SSCI), Science Citation Index Expanded (SCI-EXPANDED), Arts & Humanities Citation Index (A&HCI), Conference Proceedings Citation Index - Social Sciences & Humanities (CPCI-SSH), Conference Proceedings Citation Index – Science (CPCI-S), Emerging Sources Citation Index (ESCI). The search was performed at 17:20 on 18 August 2024, and 498 articles were retrieved.

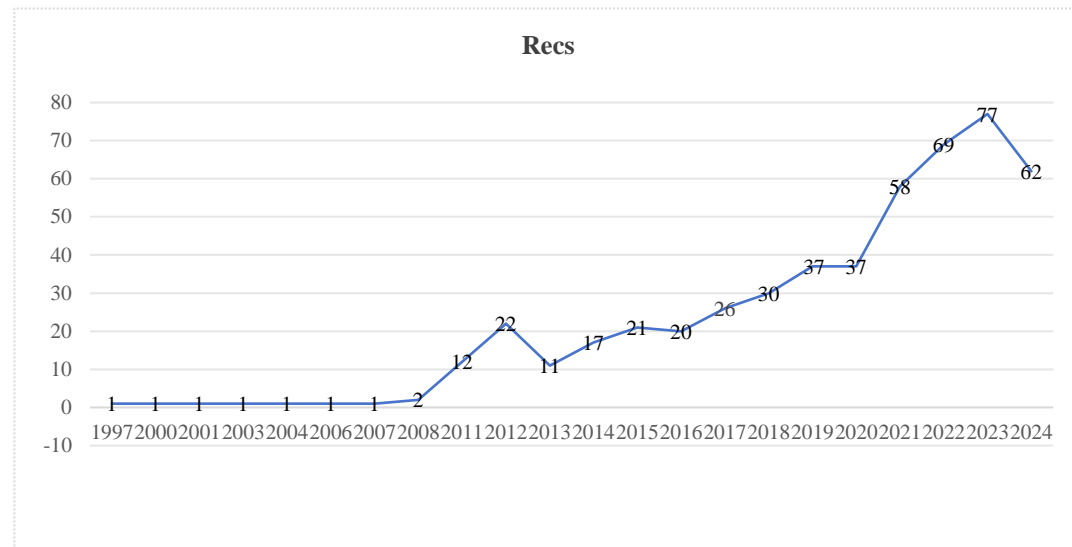
### **2.3. Data supplementing**

The researchers assessed the titles, abstracts, keywords, and full texts of the papers to ascertain the suitability of the dataset for studying student-teacher interactions, student engagement, and academic accomplishment. While analysing the citations of 498 publications imported from the World of Science into HistCite, we found that many articles with high citation rates were unintentionally omitted from the final dataset only because keyword searches were used. By including 10 scholarly pieces that were both crucial and extensively referenced, we were able to generate the ultimate dataset, comprising 508 articles.

### **2.4. Yearly output**

Any academic field's research initiative and productivity—at the individual, organizational, or national level—can be measured by the quantity of research publications. Figure 1 shows the effect of student-teacher interactions on participation. There has been a sharp increase in the quantity of publications covering this topic since 2008. A tipping point was reached in 2012, though, and the number of freshly published publications started to fall. The number of relevant articles also increases year from 2020 to 2023, with a peak in 2020 and 2021. Research on the dynamics between educators and their pupils has attracted a lot of attention since the global spread of the COVID-19 pandemic, and the researchers believe that this behaviour is a symptom of the virus's effects. The influence of teacher-student connections on student engagement will be the topic of intense research for the near future, even though the pace of publication rise will slow from 2023 to 2024. This is supported by the fact that 2023 is a banner year for research in this area. Find development patterns and academic focus areas in connected study fields with HistCite's "annual output" feature.

**Figure 1 Yearly output**



Source: Author

## 2.5. Country/ Region Distribution

Analysis reveals that the 508 articles are distributed throughout 55 distinct regions and countries. Table 2 displays the countries or areas that have authored a minimum of 10 articles. There are thirteen countries or regions that have reported 10 or more publications, with the number of publications varying from ten to one hundred fifty-four. Among these countries, the United States secures the top position in terms of overall literary volume, accounting for 30.3% of all publications. Peoples R China secures the second spot with a 19.1% share. The United States continues to be the premier nation in terms of TLCS publications. Consequently, it seems that the United States has made substantial contributions to research investigating student engagement and the dynamics of teacher-student interactions.

**Table 1 : Country (region) distribution**

No.	Country(Region)	Recs	Percentage	TLCS	TGCS
1	USA	154	30.31%	864	29501
2	Peoples R China	97	19.09%	62	1223
3	Netherlands	52	10.24%	512	4100
4	Australia	47	9.25%	146	1783
5	Canada	29	5.71%	37	561
6	Belgium	22	4.33%	101	887
7	Germany	19	3.74%	46	459
8	UK	19	3.74%	5	112
9	Spain	16	3.15%	2	361
10	Finland	13	2.56%	37	365
11	Israel	13	2.56%	17	283
12	Norway	10	1.97%	8	156
13	Sweden	10	1.97%	27	174

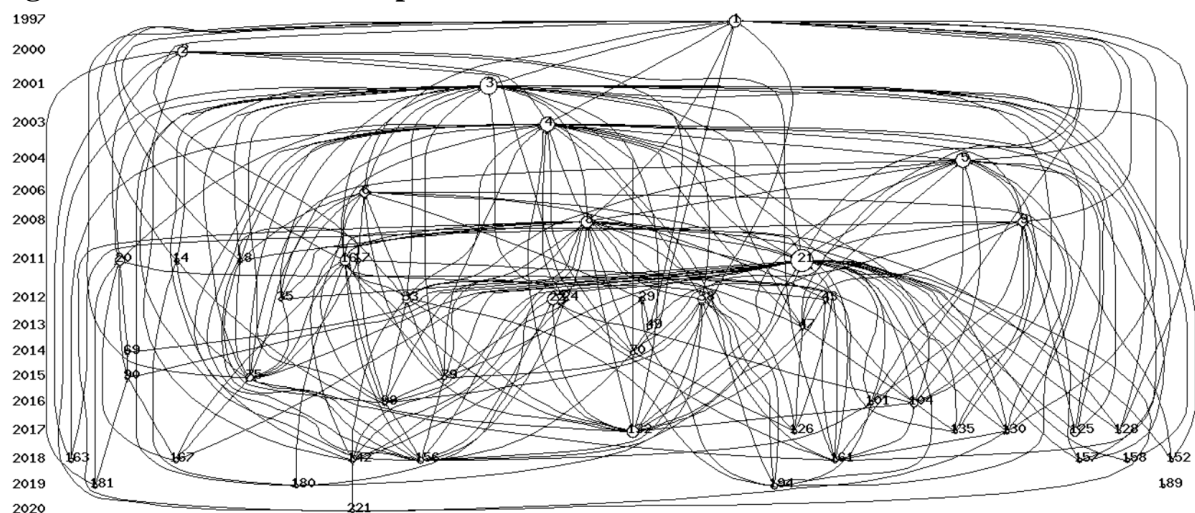
TLCS = Total Local Citation Score; TGCS = Total Global Citation Score.

Source: Author

## 2.6. Citation Map

The citation map that HistCite™ produces is shown in Figure 2. All of the works cited and their respective numerical values are displayed in Table 1. Applying the LCS metric to the top 50 articles yields 50 publications with a high number of citations. The relationships between all fifty articles are shown in this citation map that is based on LCS. Figure 2 shows a map where each node represents a single publication. Rays represent associations with publication citations and connect nodes. The number of citations is directly proportional to the size of the node. Among the most-cited articles, Node 1 is also the oldest. Additional publications have been published as a result of the study; the most often mentioned of them are Nodes 3, 4, and 21. A systematic literature evaluation was conducted to guarantee the completeness of this study and to fully understand the research topics related to student involvement and the teacher-student interaction. Fifty definitive articles and other pertinent literature on the issue were thoroughly examined for this evaluation.

**Figure 2** HistCite citation map



Source: Author

**Table 2**  
**Highly cited publications**

Node	Author ((year))	Journal or Book	LCS	GCS
1	Birch & Ladd (1997)	Journal of School Psychology	72	948
2	Deci & Ryan (2000)	Psychological Inquiry	52	15378
3	Hamre & Pianta (2001)	Child Development.	134	1655
4	Furrer & Skinner (2003)	Journal of Educational	106	1322
5	Fredricks, Blumenfeld & Paris (2004)	Review of Educational Research	99	5182
6	Baker (2006)	Journal of School Psychology	45	463

8	Hughes, Luo ,Kwok& Loyd (2008)	Journal of Educational Psychology	66	418
9	Skinner, Marchand, Furrer &Kindermann (2008)	Journal of Educational Psychology.	47	1081
14	Murray& Zvoch (2011)	Journal of Emotional and Behavioral Disorders	12	71
16	Hughes (2011)	Elementary School Journal	52	209
17	Farmer, Lines & Hamm (2011)	Journal of Applied Developmental Psychology	18	349
18	Hughes & Chen (2011)	Journal of Applied Developmental Psychology	12	137
20	Spilt, Koomen & Thijs (2011)	Educational Psychology Review	44	506
21	Roorda, Koomen Spilt, Oort(2011)	Review of Educational Research	211	1168
22	Verschueren, Koomen (2012)	Attachment & Human Development	58	378
24	Hughes (2012)	Attachment & Human Development	15	95
29	Opdenakker, Maulana&Brok (2012)	School Effectiveness and School Improvement	16	104
33	Hughes, Wu, Kwok, Villarreal, Johnson (2012)	Journal of Educational Psychology	33	112
35	Spilt, Koomen & Jak (2012)	Journal of School Psychology	9	120
38	Spilt, Hughes , Wu & Kwok (2012)	Child Development	35	200
43	Nurmi (2012)	Educational Research Review	18	173
47	Archambault, Pagani, Fitzpatrick (2013)	Learning and Instruction	11	57
49	Stroet, Opdenakker & Minnaert (2013)	Educational Research Review	11	237
69	Hagenauer & Volet (2014)	Oxford Review of Education	15	239
70	Kosir & Tement(2014)	European Journal of Psychology of Education	15	76
75	McGrath & Van Berge (2015)	Educational Research Review	31	217
79	Wu & Hughes (2015)	School Psychology Quarterly	11	30
90	Hagenauer, Hascher Volet (2015)	European Journal of Psychology of Education	15	199
99	Hughes & Im (2016)	Child Development	10	64
101	Ruzek, Hafen , Allen, Gregory, Mikami, et al. (2016)	Learning and Instruction	13	262
104	Engels, Colpin, Van	Journal of Youth and Adolescence	28	99



	Leeuwen, Bijttebier, Van Den Noortgate W, et al. (2016)			
125	Quin (2017)	Review of Educational Research	41	266
126	Berkowitz, Moore, Astor, Benbenishty(2017)	Review of Educational Research	12	128
128	Mason, Hajovsky, McCune, Turek(2017)	School Psychology Review	8	41
130	Hajovsky, Mason, McCune (2017)	Journal of School Psychology	12	66
132	Roorda, Jak , Zee, Oort, Koomen (2017)	School Psychology Review	71	284
135	Engels, Colpin, Van Leeuwen, Bijttebier, Van Den Noortgate, et al. (2017)	Journal of School Psychology	9	48
142	Ma, Du, Hau, Liu (2018)	Educational Psychology	17	53
152	Brinkworth, McIntyre, Juraschek, Gehlbac (2018)	Journal of Applied Developmental Psychology	9	39
156	Hughes, Cao (2018)	Journal of School Psychology	25	81
157	Henry& Thorsen (2018)	Modern Language Journal	13	65
158	Yu, Johnson, Deutsch, Varga (2018)	Journal of Adolescent Research	10	41
161	Bosman , Roorda, Veen , Koomen (2018)	Journal of School Psychology	18	56
163	Bakadorova & Raufelder (2018)	Journal of Applied Developmental Psychology	10	26
167	Aldrup, Klusmann, LÃ¼dtke, GÃ¼llner, Trautwein (2018)	Learning and Instruction	17	175
180	Prewett, Bergin & Huang (2019)	School Psychology International	9	35
181	Taxer, Becker-Kurz& Frenzel (2019)	Social Psychology of Education	12	70
189	Froiland & Worrell (2019)	Psychology in the Schools	9	47
194	Martin & Collie (2019)	Journal of Educational Psychology	25	106
221	Zhou, Du, Hau , Luo, Feng, et al. (2020)	Educational Psychology	9	41

LCS = Local Citation Score; GCS = Global Citation Score.  
Source: Author

### 3. Research Development

#### 3.1 The Influence of Teacher-student Relationships on Students Engagement

The first article published by Birch and Ladd (1997), titled "The teacher-child relationship and children's early school adjustment," is a significant and influential work of literature. The present study investigated the influence of teacher-child relationships on the initial period of children's transition to formal education. Research indicates that the ability of children to adapt to new school contexts is crucially influenced by the strength of these relationships. The study revealed that the social, emotional, and academic performance of pupils shown enhancement when they maintained intimate relationships with their professors. Birch and Ladd's research emphasizes the importance of social and emotional partnerships in the classroom, asserting that the relationship between teacher and student throughout the early years of schooling can influence the child's growth and development. Several research have cited this original work, leading to a significant increase in interest and support for the concept. Subsequent research focused on the influence of teacher-student interactions on students' acquisition of knowledge and academic achievement in the classroom.

A study conducted by Hughes and Chen (2011) investigated the reciprocal influence of student-teacher and student-peer relationships on academic self-efficacy. The study's primary findings indicate that students' academic self-efficacy is significantly improved when they establish favourable interpersonal relationships with their professors, characterized by emotional support, understanding, and trust. Perceiving that their teachers value and understand them helps students develop self-assurance in their academic achievement. Engagement in supportive interactions among students enhances their academic self-efficacy by fostering the development and maintenance of positive relationships with both teachers and peers. High-quality connections and robust self-efficacy are interconnected components of a mutually reinforcing cycle; they continuously propel one other towards progress. Hagenauer and Volet (2014) examined the significance of teacher-student interactions in higher education institutions. Universities' endeavours to cultivate friendly relationships can enhance students' emotional and social well-being, as well as their academic performance, therefore creating a more favourable and efficient learning atmosphere at large. An investigation conducted by Košir and Tement in 2014 examined the relationship between teacher-student interactions and academic performance among various age groups. Empirical evidence indicates that students across all age groups experience significant advantages from competent teacher-student interactions within the educational setting. Enhanced academic achievement is shown when students and teachers develop constructive and mutually advantageous relationships. The presence of these mutually advantageous relationships creates a classroom atmosphere that is favourable for learning, leading to increased levels of motivation, engagement, and confidence among students in their capacity to attain their academic objectives. Research indicates that higher academic performance enhanced the quality of relationships between instructors and children. Ma et al. (2018) examined the influence of teacher-student interactions on the academic achievement of students in Chinese English as a Foreign Language (EFL) classrooms. Students derive greater comfort, motivation, and confidence in their capacity to engage in studying within an environment that fosters these interactions, which are marked by trust, support, and mutual respect. The study suggests that multiple variables, such as students' learning motivation, self-efficacy, and engagement, modulate the indirect impact of teacher-student interactions on academic achievement.

### **3.2 The Influence of Teacher-student Relationships on Students' Personal Growth**



Scholarly research on teacher-student interactions extends beyond academics to cover students' interpersonal relationships, psychological well-being, and general contentment. Hughes and Im (2016) investigated the impact of teacher-student relationships on children's peer relationships, namely mutual hatred and liking, throughout the early years of elementary school. Positive teacher-student interactions, defined by amicability, encouragement, and limited disagreement, are connected with higher levels of peer liking and lower levels of peer aversion. Children who have pleasant and encouraging interactions with their teachers are more likely to be welcomed and valued by their peers. Bakadorova and Raufelder (2018) analyse the critical importance of teacher-student relationships in satisfying the psychological needs of teenagers. Statistically, the findings show a robust link between positive and supportive teacher-student relationships and students' psychological well-being. Adolescents' perceptions of caring, sympathetic, and approachable teachers are positively connected with improved confidence in their abilities, self-sufficiency in their learning, and a sense of connection to others in the classroom. Meeting these requirements is connected with increased internal motivation, participation in school activities, and general emotional well-being. Prioritizing teacher-student relationships allows educators to improve kids' innate motivation, involvement, and welfare, resulting in higher educational attainment and stronger adolescent growth. Froiland, Worrell, and Oh (2019) investigated the effect of teacher-student interpersonal dynamics on psychological need satisfaction and overall well-being. The study's findings show that teacher-student connections have a major impact on students' emotional and psychological well-being, as well as academic success. Adolescents who have supportive, affectionate, and sympathetic relationships with their teachers have a higher sense of independence, competence, and social connectivity. Fulfilling these criteria improves students' academic happiness and overall well-being, regardless of their background.

### **3.3 The Influence of Teacher-student Relationships on Teachers**

Analysis of the impact of teacher-student interactions include both the students and the teachers. The influence of teacher-student relationships on instructors' well-being was investigated by Spilt, Koomen, and Thijs (2011). Research has shown that the quality of relationships between teachers and students is crucial not only for the development and academic achievements of children, but also for the psychological well-being and job satisfaction of teachers. Instructional staff that engage with their students in a polite, emotionally linked, and conflict-free manner tend to experience increased job satisfaction, reduced stress levels, and a feeling of professional achievement. Positive experiences of this nature enhance the sense of competence, motivation, and appreciation among instructors in their respective professions, therefore promoting their overall emotional and mental well-being. Specifically, Taxer, Becker-Kurz, and Frenzel (2019) examine how the quality of teacher-student relationships impacts teachers' emotional well-being, namely in terms of emotional fatigue. The present study aims to examine the potential mediating role of feelings of pleasure and anger in the association under investigation. These results underscore the importance of relational dynamics in the classroom, suggesting that allocating resources to professional development and support for teachers can enhance both the well-being of teachers and the educational setting.

A meta-analysis published by Roorda et al. (2011) titled "The Influence of Affective Teacher-Student Relationships on Students' School Engagement and Achievement: A

Meta Analytic Approach" is the most often referenced article in this study field. The study examined the impact of affective (emotional) connections between teachers and students on students' academic achievement and school engagement. Their research analysis incorporated data from several studies, encompassing a diverse array of educational environments and age cohorts. Research revealed a strong correlation between positive affective teacher-student interactions, characterised by warmth, emotional support, and less conflict, and higher levels of student engagement and academic achievement. The research revealed that these connections exert a notably significant influence during the initial years of schooling, but they continue to have a lasting effect throughout a student's academic trajectory. Moreover, robust teacher-student interactions had an impact on both cognitive performance (such as attentiveness and persistence) and emotional involvement (such as enthusiasm and pleasure in the learning process). The findings of Roorda and colleagues emphasize the importance of emotional teacher-student interactions in enhancing student engagement and academic achievement. In order to enhance student well-being and academic achievement, their findings indicate that educators, school administrators, and politicians should prioritize initiatives to build strong emotional bonds in the classroom.

### **3.4 Research on Antecedent Factors of Teacher-student Relationships**

Gender matching between teachers and students was the subject of an investigation by Spilt, Koomen, and Jak (2012). Findings showed that gender alignment between teachers and students did not predict improvements in relationship outcomes, even if overall quality of teacher-student interactions is critical for student engagement and well-being. It appears that factors other than gender, like teachers' empathy, people skills, and professional practices, are more important in establishing high-quality teacher-student relationships, since both male and female students and teachers report similarly positive relationships. The relationship between student characteristics and the quality of teacher-child interactions was the subject of a thorough investigation by Nurmi (2012). The meta-analysis drew on data from other research to understand more about the effects of student demographics on teacher-student interactions, including gender, age, behavioural tendencies, and socio-emotional features. When students demonstrate prosocial conduct, emotional resilience, and academic motivation, the results show that teacher-student relationships are more likely to be robust.

## **4. Measurement Method**

Numerous studies examining the influence of student-teacher relationships on academic engagement and its educational results often employ regression analysis, as demonstrated in the present study. Regression analysis is a statistical method used to examine the relationship between a dependent variable and a group of independent variables (Frost, 2019). The study seeks to find significant factors related to the determinants of student engagement and the dynamics of teacher-student interactions. Much research solely makes assumptions about the correlations between variables and thereafter create a questionnaire to randomly choose participants for completion. To establish the correlations between the variables, the corresponding values are computed using mathematical methods, and subsequently assessed and analysed in the research. Baker (2006) highlighted the importance of quantitative research methods, namely a correlational design. This approach was employed to examine the level of adaptation of children to primary school and the strength of the relationships between teachers and their pupils. Baker employed statistical techniques, namely regression analysis, to

examine the manner in which different school adjustment factors were associated with the quality of teacher-child relationships. The objective of this study was to investigate if positive connections, characterised by high proximity and minimal conflict, can predict improved school adjustment outcomes. This hypothesis was examined in relation to other factors that may impact these results. The study revealed a significant association between improved school adjustment and favourable teacher-child relationships.

Hughes et al. (2008) conducted a longitudinal study spanning three years to investigate the correlation between teacher-student support, student engagement, and academic achievement. Hierarchical linear modelling (HLM) enables researchers to analyse individual trajectories over time and supports hierarchical data structures, making it well-suited for longitudinal data analytics. The researchers employed the HLM method to assess the data. The findings underscored the need of establishing strong links between teachers and students as a means to enhance students' long-term involvement and academic achievement. The research indicates that teacher assistance can impact both the immediate outcomes and the future academic paths.

Hughes et al. (2012) conducted a quantitative research analysis to examine the indirect impacts of student-teacher relationships on academic achievement. By employing this approach, we can analyse the several mediating elements that impact students' assessment of their teachers' interactions and the subsequent impact of these assessments on their academic achievement. Based on the findings, the academic performance of students was indirectly influenced by their perceptions of the interactions between their teachers and themselves. Integrating both direct and indirect effects is essential in educational research. The use of structural equation modelling (SEM) in this study elucidates the several ways in which teacher-student interactions influence students' academic performance in the classroom.

Engels et al. (2016) evaluated the peer status, teacher-student relationships, and behavioural engagement of teenagers using a longitudinal research approach. Cross-lagged panel modelling, a statistical technique suitable for longitudinal data and investigating reciprocal effects, was employed in this study to gather data from a sample of middle school students at several time intervals. The findings suggest that robust teacher-student interactions and enhanced behavioural engagement can significantly impact the social and intellectual development of students. The findings of this study have practical implications for educators as they demonstrate that enhancing teacher-student relationships and engaging pupils in classroom activities can enhance both their social and academic achievements.

To comprehensively assess the quality of student-teacher relationships, Prewett et al. (2019) employed a mixed-methods research design that included both quantitative and qualitative approaches. The researchers employed questionnaires to collect data from both instructors and students in order to systematically measure the intensity of student-teacher relationships. To obtain a more thorough understanding of the perspectives of instructors and students on their interactions, the study used qualitative approaches such as interviews or open-ended survey questions in addition to surveys. This mixed-methods approach enabled researchers to obtain a thorough understanding of the quality of student-teacher relationships by integrating quantitative data with detailed narrative observations.

## **5. Directions for Future Research**

Cross-sectional and longitudinal studies are frequently used in relevant field research today (Baker, 2006; Hughes et al., 2008; Engels et al., 2016). Cross-sectional studies are a more efficient way to gather data in a shorter timeframe and at a lower cost, as they require only one data collection session. Nonetheless, the temporal linearity of the data collection technique makes this approach difficult to establish causal links. Surveys are critical for determining the prevalence of diseases or behaviours in a population throughout time, providing valuable foundational data for future scientific investigations. [Lavin. 2006]. Nonetheless, longitudinal studies can be time-consuming and costly because they need long-term surveillance of the same individuals. Participant dropout can introduce restrictions that affect the reliability and generalizability of the results (Cohen & Cohen, 1983). Future research in comparable settings could investigate the combination of cross-sectional and longitudinal approaches. A first cross-sectional study could provide insight into the relationship between psychological well-being and teacher-student interactions. According to this methodology, a specific subset of participants may be selected for extended observation and surveys in order to evaluate any dynamic changes more effectively across components, hence increasing the objectivity and comprehensiveness of the data. The use of various approaches in research projects can improve the relevance of research findings as well as our understanding of the links between student involvement and teacher-student relationships.

Currently, there are various intricate and dynamic hurdles to the connection between educators and students in educational institutions. There have been instances where the ethical conduct of university instructors has been called into question in online public opinion procedures. These occurrences are difficult to control because of their suddenness, fast development, widespread diffusion, and potential to cause a crisis in public confidence in teachers. Certain institutions' ineffective communication strategies, failure to respond effectively, and lack of knowledge of the dangers of public opinion have resulted in a significant drop in students' trust in professors. Furthermore, this has led to a deterioration in students' ability to follow instructor instructions, study motivation, and involvement in information acquisition (Ni, 2024). Using the specific conditions of the teacher-student trust crisis, the researchers may investigate students' motivation to learn, the frequency of classroom question-and-answer exchanges, their belief in their own ability to learn, and their learning performance and achievements. The goal is to identify the processes via which insufficient teacher-student connections affect student participation. Future research should look into the fundamental mechanisms that explain the effect of teacher-student interactions on student engagement. To gain a better understanding of the most important components of the connection, it may be required to investigate variables such as emotional support, trust, communication strategies, and teacher expectations.

The rapid spread of online education has transformed the traditional classroom setting, creating both opportunities and challenges for developing and maintaining meaningful teacher-student connections (Hsu, 2023). While face-to-face encounters are distinguished by physical presence, nonverbal clues, and spontaneous communication, online contexts lack these essential components for building rapport and trust between educators and students (Lai, 2012). As a result, students often experience emotions of isolation, detachment, and lack of immersion in online courses, which can have a detrimental impact on their motivation, involvement, and overall educational experience (Chen, 2023). Prior research has demonstrated that strong teacher-student interactions are critical for increasing student involvement, boosting academic

achievement, and promoting emotional and psychological well-being (Hughes, 2012; Hagenauer & Volet, 2014; McGrath & Van Berge, 2015; Zhou et al., 2020). Nonetheless, the shift to digital platforms has raised concerns about the ability to successfully foster and maintain these ties without the benefits of traditional, face-to-face interactions. Variations in technological proficiency between teachers and students, inequities in access to dependable digital tools, and the challenge of developing a sense of community in a virtual environment all contribute to this problem. As a result, future research must study the formation and maintenance of relationships between professors and students in online contexts, as well as their impact on student engagement, given the growing popularity of digital and hybrid learning approaches. To adapt relationship-building tactics for use in new educational environments, it is critical to understand the unique dynamics of virtual teacher-student interactions.

## 6. Conclusion

This study employs Histcite to carry out a methodical examination of existing literature on the correlation between teacher-student interactions and student involvement. The review is the result of an analysis of 508 papers that were published from 1997 to 2024 and obtained from the Web of Science database. The main objective of this study is to examine the influence of teacher-student relationships on student engagement and provide a concise overview of prior research approaches in this field. Building upon the references and analysis, this paper proposes three prospective areas of further research for this subject. The examination of the influence of teacher-student relationships on student involvement is essential for the decision-making process of educational institutions, and it is our duty and dedication to conduct research and provide inspiration in this field. The objective of this study is to comprehensively clarify the correlation between teacher-student interactions and student engagement, to motivate educators to acquire further knowledge on this subject, and to motivate researchers to carry out further study to offer greater understanding and solutions.

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