

**Examining the Relationship Between Student Perceptions of Teacher-Student Relationships and Academic Outcomes**

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## ABSTRACT

The teacher–student relationship (TSR) is a fundamental component of academic success, significantly influencing student motivation and achievement (Brinkworth et al., 2017; Roorda et al., 2011). While extensive research has explored TSRs in primary and secondary education, there remains a notable gap in higher education studies, despite existing research indicating that strong TSRs enhance cognitive, emotional, and behavioral engagement, leading to improved academic performance and psychological well-being (Gunuc & Kuzu, 2014; Ullah & Wilson, 2007). The purpose of this study was to examine the extent to which student perceptions of the teacher–student relationship (TSR) predict academic achievement and motivation among undergraduate students. A quantitative, non-experimental, cross-sectional predictive design was employed. Participants included 21 undergraduate students enrolled in an Anatomy and Physiology I laboratory course at a mid-sized public university in the United States. Student perceptions of TSR were measured using the Teacher–Student Relationship Inventory (TSRI). Academic achievement was measured using course GPA, and motivation was assessed using selected subscales of the Motivated Strategies for Learning Questionnaire (MSLQ) and the Relative Autonomy Index (RAI) derived from the Self-Regulation Questionnaire–Academic (SRQ-A). Pearson correlations and simple linear regression analyses were conducted. Results indicated that TSR did not significantly predict academic achievement or the primary motivational constructs measured. However, exploratory analyses indicated that stronger perceived TSR was associated with lower levels of external and introjected regulation. These findings suggest that teacher–student relationships may influence student motivation by reducing externally driven forms of motivation in higher education settings.

## DEDICATION

I wholeheartedly dedicate this dissertation to my father. He instilled in me the meaning of hard work and the importance of education throughout my childhood. He has truly been my biggest cheerleader throughout this research, and I am incredibly proud to bring a Dr. David into the family. Words cannot describe how thankful I am for the opportunities you provided me with and the endless amounts of support you provided along the way.

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## GLOSSARY OF TERMS

1. Teacher–Student Relationship (TSR) or Student–Teacher Relationship (STR)- A connection between teachers and students built on emotional support, trust, and respect, which significantly impacts academic success and engagement (Afzal et al., 2023; Brinkworth et al., 2017).
2. Classroom Climate- The emotional, social, and academic environment in a classroom, shaped by TSRs and faculty engagement. A positive climate fosters student motivation, participation, and a sense of belonging (La Paro et al., 2004; Pianta et al., 2008).
3. Attachment Theory (AT)- A framework by Bowlby (1969) explaining how secure, supportive relationships (including TSRs) promote academic and emotional development (Ainsworth, 1989; Verschueren & Koomen, 2012).
4. Self-Determination Theory (SDT)- A motivation theory stating that students thrive when their needs for autonomy, competence, and relatedness are met (Deci & Ryan, 2000a).
5. Faculty–student Interaction- The quality and frequency of student interactions with faculty, which directly influences academic engagement and success (Gunuc & Kuzu, 2014; Ullah & Wilson, 2007).
6. Student Perception of TSR- The way students assess their relationship with faculty, including emotional closeness, support, and communication. A positive perception of TSR is linked to higher engagement and achievement (Roorda et al., 2011; Gunuc & Kuzu, 2014).
7. Teacher Empathy & Care- Faculty’s ability to understand students’ emotions, challenges, and academic needs, which enhances engagement and learning outcomes (Meyers et al., 2019; Cornelius-White, 2007).

8. Student Motivation- The intrinsic or extrinsic drive to engage in academic tasks. Higher TSR quality enhances motivation by creating a sense of belonging and emotional support (Frymier, 2007; Frisby & Myers, 2008).
9. Sense of Belonging- A student’s feeling of being valued, included, and supported in the academic environment. Strong TSRs improve this sense, leading to higher persistence and retention rates (Freeman et al., 2007; Tinto, 1993).
10. Teacher Warmth & Closeness- The level of emotional support provided by teachers, which declines as students progress through education, often causing disengagement (Ettedal & Shi, 2020; Rimm-Kaufman & Sandilos, 2012).
11. Academic Achievement- Measured through GPA, course grade, test scores, and skill development, and strongly influenced by TSR quality and student engagement (Roorda et al., 2011; Goktas & Kaya, 2023).

## CHAPTER ONE: INTRODUCTION

Relationships between teachers and students have long been recognized as a central component of the academic environment. The quality of the teacher–student relationship (TSR) extends far beyond routine instructional interactions and plays a significant role in shaping students’ academic experiences and personal development (Hagenauer & Volet, 2014; Roorda et al., 2011).

Supportive relationships that foster a sense of psychological safety can increase students’ intrinsic motivation, thereby enhancing cognitive and emotional investment in learning (Deci & Ryan, 2000a; Frymier & Houser, 2000; Gunuc & Kuzu, 2014; Hagenauer & Volet, 2014; Roorda et al., 2011). Additionally, positive teacher–student relationships (TSRs) are associated with lower academic anxiety, greater emotional resilience, and long-term knowledge retention, leading to increased self-efficacy and sustained persistence in their education (Frisby & Martin, 2010; Micari & Pazos, 2012; Schuck et al., 2021).

Given the significant role TSRs play in shaping student motivation and academic success, it is crucial to explore how they are defined and understood in the literature. A clearer understanding of TSR allows for a more comprehensive analysis of its components, including emotional support, trust, and instructional interactions, and how these factors demonstrate significant relationships with student development and learning outcomes (Afzal et al., 2023; Brinkworth et al., 2017; Coristine, 2022).

Various scholars define the teacher–student relationship (TSR) as a broad concept that stresses teachers' emotional support, instructional support, classroom safety, emotional closeness, and conflict resolution (Afzal et al., 2023; Mallik, 2023). Building on this, Coristine (2022) defines it as a positive relationship between the teacher and the student in efforts to gain trust and

respect from each other. Further, Brinkworth et al. (2017) defined TSRs as “teachers’ and students’ aggregated and ongoing perceptions of one another, affect toward each other, and interactions over time” (p. 2). Together, these definitions illustrate that TSRs are built through continuous engagement, trust, and meaningful interactions (Brinkworth et al., 2017). For the purposes of this study, these definitions are synthesized, and TSR is defined as a relationship between teachers and students that emphasizes emotional support and closeness built on trust and affection.

#### Defining the Teacher–Student Relationship and Its Interpersonal Nature

Just as any two individuals develop relationships through interaction and the establishment of expectations, teacher–student relationships also emerge similarly. When students and teachers first meet in the classroom, they establish communication patterns and have certain expectations for relationships to form (Frymier, 2007; Frymier & Houser, 2000). Because of these mutual relational goals, the relationship between an instructor and student has been labeled an interpersonal one (Dobransky & Frymier, 2004; Frymier & Houser, 2000; Goktas & Kaya, 2023). Interpersonal relationships are defined by Snijders et al. (2022) as a strong, deep, or close association or acquaintance between people. Within this context, there is an attachment-like relationship between the student and the teacher, where teachers are held responsible for developing effective interpersonal relationships, creating bonds of trust with students, and building a safe and enjoyable learning environment (Xie & Derakhshan, 2021).

When students perceive their teachers as approachable and emotionally supportive, they are more likely to actively engage in class discussions, seek feedback, and express their academic challenges without fear of judgment (Frymier & Houser, 2000). This sense of psychological safety reduces anxiety, increases participation, and encourages students to take

intellectual risks, which are essential for deep learning and critical thinking (Schuck et al., 2021). Beyond individual student behavior, these relationship characteristics also positively shape the broader educational environment by fostering a classroom culture of collaboration, respect, and motivation. In classrooms where strong TSRs exist, students tend to be more cooperative, display higher levels of intrinsic motivation, and exhibit greater persistence in overcoming academic difficulties (Holmes et al., 1999; Xie & Derakhshan, 2021). Additionally, when teachers actively build meaningful connections with students, classroom management improves, absenteeism decreases, and overall academic performance rises (Schuck et al., 2021).

By cultivating an environment where students feel valued and understood, TSRs not only enhance individual learning experiences but also promote inclusivity, engagement, and collective academic growth. In addition to academic development, numerous researchers have stated that interpersonal relationships in education are essential in student learning, engagement, achievement, well-being, and motivation (Frisby & Martin, 2010; Worley et al., 2007; Zainullah & Riniati, 2023; Zhou, 2021).

#### Higher Education Teacher–Student Relationships

Although the majority of the research examining teacher–student relationships has been conducted in the primary and secondary school settings, these interpersonal relationships also play a pivotal role in the psychological development of students in higher education (Furrer & Skinner, 2003; Guerra-Martin et al., 2017; Karcher, 2008; Komarraju et al., 2010; Micari & Pazos, 2012; O’Connor, 2010; Pascarella, 2006).

Research suggests that positive teacher–student relationships (TSRs) in higher education encourage students to seek academic support, participate in intellectual discussions, and remain resilient when facing academic challenges (Komarraju et al., 2010; Micari & Pazos, 2012).

Students who perceive their instructors as approachable and invested in their success often report greater academic confidence, increased intrinsic motivation, and stronger engagement in their coursework (Deci & Ryan, 2000a; Roorda et al., 2011). These relationships may be particularly influential during the first year of college, when students are adjusting to new academic expectations and social environments (Pittman & Richmond, 2008; Tinto, 1993). Faculty who actively engage with students during this transition can help foster a sense of belonging and academic self-efficacy, which support persistence in higher education (Komarraju et al., 2010; Pascarella, 2006).

Despite the recognized importance of TSRs in higher education, little research has examined how these relationships function compared with the extensive body of research conducted in K–12 settings (Hagenauer & Volet, 2014; Karpouza & Emvalotis, 2019; Roorda et al., 2017). Additionally, structural characteristics of universities—such as large class sizes, increasing research expectations for faculty, and limited opportunities for individualized interaction—may reduce the frequency and depth of student–faculty relationships (Arum & Roksa, 2011; Chory & Offstein, 2017; Hornsby & Osman, 2014). As a result, many students experience limited meaningful interaction with faculty, despite evidence that such relationships contribute to academic engagement and persistence (Cuseo, 2007; Kuh & Hu, 2001).

Together, these findings suggest that teacher–student relationships remain an important yet underexplored component of student success in higher education. However, the massification of higher education and a limited focus on relationship-building between instructors and students create barriers. Understanding how students perceive these relationships and how they relate to academic motivation and achievement may provide valuable insight into the role of relational dynamics in postsecondary learning environments, leading to improved academic success.

### Problem Statement

Considering most studies regarding TSRs focus on the K-12 grades, there is a dearth in the literature addressing TSRs in higher education (Hagenauer & Volet, 2014; Karpouza & Emvalotis, 2019; Komarraju et al., 2010; Mallik, 2023; Roorda et al., 2017; Wilcox et al., 2005). Strong TSRs in elementary and middle school are well-documented as key contributors to student engagement, motivation, and academic success, yet the factors that foster high-quality TSRs in secondary and post-secondary education remain vastly underexplored (Hagenauer & Volet, 2014; Karpouza & Emvalotis, 2019; Roorda et al., 2017). Only a limited number of studies have explored faculty-student relationship quality in higher education, leaving many aspects of TSRs in higher education unexamined (Cho & Auger, 2013; Hennig-Thurau et al., 2001; Snijders et al., 2018, 2019, 2020).

Research suggests that strong TSRs are linked to increased student motivation and academic achievement, yet faculty in higher education often receive little to no training on relationship-building with students, instead prioritizing research and content expertise (Arum & Roksa, 2011; Chory & Offstein, 2017). Instructors in higher education often prioritize content delivery and subject-matter clarity over the development of meaningful teacher–student relationships (Buskist et al., 2002; Schaeffer et al., 2003). While clear instruction is undoubtedly important, this narrow focus can lead faculty to overlook the relational aspects of teaching that are equally critical to student success (Chory & Offstein, 2017; Arum & Roksa, 2011). This lack of emphasis on faculty–student rapport contributes to low levels of student engagement, declining academic motivation, and reduced student–faculty interactions, particularly among first-year college students who experience the greatest need for support during their transition (Pittman & Richmond, 2008; Tinto, 1993). Furthermore, as students progress through their

education, perceived faculty support tends to decline, exacerbating feelings of disconnection and academic disengagement (Ettekal & Shi, 2020; Rimm-Kaufman & Sandilos, 2012).

The long-term consequences of these relational deficits can be substantial. Positive TSRs have been associated with higher levels of student persistence, retention, and academic success, as well as the development of important competencies such as self-efficacy, adaptability, and problem-solving (Freeman et al., 2007; Kim & Lundberg, 2016; Schuck et al., 2021; Tinto, 1993). Conversely, students who lack meaningful faculty connections may experience greater academic burnout, emotional isolation, and decreased persistence in their degree programs (Furrer & Skinner, 2003; McGivney, 1996; Pascarella, 2006). Additionally, students with weak TSRs may also miss out on the motivational, cognitive, and emotional benefits that such relationships provide, including greater self-efficacy, improved critical thinking skills, and increased resilience in the face of academic challenges (Kim & Lundberg, 2016; McGivney, 1996).

While theories such as Attachment Theory (Bowlby, 1969) and Self-Determination Theory (Deci & Ryan, 2000a) suggest that emotional support and interpersonal connections play a vital role in student success, there is a lack of empirical research examining student perspectives on TSRs in higher education (Hagenauer & Volet, 2014; Brinkworth et al., 2017; Hagenauer et al., 2023). Addressing this gap is essential to deepen our understanding of how these relationships function and to inform practices and policies that promote student engagement, retention, and equity (Freeman et al., 2007; Furrer & Skinner, 2003; Pascarella, 2006).

### Research Purpose

The purpose of this study was to examine the extent to which student perceptions of the teacher–student relationship (TSR) predict academic achievement (GPA) and motivation in a higher education context. Specifically, this study investigated whether students’ perceived relational quality with faculty serves as a significant predictor of grade point average (GPA) and motivational outcomes as measured by the MSLQ and SRQ-A. By exploring these relationships, educators and administrators can gain a deeper understanding of TSRs in higher education and identify factors that may influence student success and motivation.

### Significance of the Study

TSR can be challenging to conceptualize in a college setting because relatively few studies have been conducted on this topic in higher education (Snijders et al., 2022). Although previous research has examined elements of effective teaching or interpersonal behaviors from the student perspective, many studies do not explicitly measure the teacher–student relationship as a distinct construct (Mallik, 2023; Micari & Pazos, 2012).

Filling this gap has important practical implications for both educators and students. Understanding how students perceive their relationship with their instructor can help educators adapt their teaching strategies to better meet student needs and ultimately improve student motivation, engagement, and academic achievement (Brinkworth et al., 2017; Furrer & Skinner, 2003; Hagenauer et al., 2023; Kim & Lundberg, 2016). For students, strong TSRs can create a more inclusive and supportive educational experience, especially for first-generation and underrepresented students who may depend more heavily on faculty relationships for guidance and a sense of belonging (McGivney, 1996; Palmer et al., 2009; Tinto, 1993).

Examining the elements and perspectives of the TSR in the college setting from the student perspective can be essential for improving college students' academic engagement and achievement.

#### Research Questions and Hypotheses

**RQ1:** To what extent do student perceptions of TSR predict student academic achievement (GPA)?

**H1a:** Student perceptions of the teacher–student relationship significantly predict student academic achievement (GPA).

**H0a:** Student perceptions of the teacher–student relationship do not significantly predict student academic achievement (GPA).

**RQ2:** To what extent do student perceptions of TSR predict student motivation (MSLQ subscales and RAI)?

**H1b:** Student perceptions of the teacher–student relationship significantly predict student motivation.

**H0b:** Student perceptions of the teacher–student relationship do not significantly predict student motivation.

#### Summary

The teacher–student relationship (TSR) is a critical factor influencing student engagement, motivation, and academic achievement (Brinkworth et al., 2017; Roorda et al., 2011). While research extensively examines TSRs in primary and secondary education, there remains a notable gap in higher education, where faculty–student interactions are often limited by institutional priorities and poor faculty training (Arum & Roksa, 2011; Chory & Offstein, 2017). Theories such as Attachment Theory (Bowlby, 1969) and Self-Determination Theory

(Deci & Ryan, 2000a) suggest that secure, emotionally supportive relationships in education foster better academic and psychological outcomes.

However, research shows that the quality and frequency of TSRs decline as students progress through their education, leading to reduced engagement and motivation (Ettekal & Shi, 2020; Rimm-Kaufman & Sandilos, 2012). This decline is associated with lower levels of motivation and perceived support (Ettekal & Shi, 2020; Rimm-Kaufman & Sandilos, 2012). Given these patterns, there is an urgent need to better understand TSRs within higher education environments.

This study aims to address a research gap by investigating students' perceptions of TSRs in higher education, focusing on how these relationships predict academic achievement (Gunuc & Kuzu, 2014; Ullah & Wilson, 2007). Our research questions examine whether TSR perceptions correlate with student GPA. Given that previous studies provide evidence of strong TSRs and academic outcomes, this research offers empirical insights into fostering more effective student–faculty interactions in higher education. Ultimately, strengthening TSRs in higher education could enhance student success, motivation, engagement, and institutional retention rates (Freeman et al., 2007; Pascarella, 2006).

## CHAPTER TWO: LITERATURE REVIEW

The purpose of this literature review is to examine the characteristics of a positive teacher–student relationship and provide evidence for the connection between teacher–student relationships, student motivation, and academic success. The literature review first provides an overview of the theoretical framework underpinnings in Attachment Theory and Self-Determination Theory. Following is a review of the literature supporting the interpersonal and emotional relationship of the teacher–student relationship, a comparison of higher education and primary and secondary school studies, and a compiled list of teacher traits that contribute to positive TSRs. Lastly, the chapter evaluates the existing literature on teacher–student relationships and their potential impact on student motivation and academic achievement.

## Theoretical Frameworks

The present study is guided by two theoretical frameworks that help explain the role of teacher–student relationships in shaping student motivation, engagement, and academic outcomes: Attachment Theory and Self-Determination Theory. Together, these frameworks provide a foundation for understanding how relational and psychological factors within educational environments influence students' learning experiences and academic success.

*Attachment Theory*

Attachment theory (AT) was first introduced by John Bowlby, who detailed the theory across three volumes of 'Attachment & Loss' (1969; 1973; 1980). It was proposed to explain the emotional bond between a child and their caregiver. Bowlby believed that this attachment plays a vital role in a child's development—specifically in their emotional, social, and cognitive growth. While much research emphasizes the relationship between a child and their caregiver, Connell and Wellborn (1991) also suggest that the emotional quality of these relationships can predict the

quality of a person's relationships with other adults. As a result, the theory has been extensively applied in educational settings, underscoring its impact on teacher-child relationships (Ainsworth, 1989; Bowlby, 1969; Verschueren & Koomen, 2012). Although most research has focused on parent-caregiver relationships, researchers acknowledge that this relationship could be similar to other interpersonal relationships in a person's life (Pianta, 1999).

### **Attachment Theory in Educational Contexts.**

Attachment theory has been widely validated in the school setting to explain the emotional relationship between a child and their teacher, where teachers can serve as a secondary or temporary attachment figure (Garcia-Rodriguez et al., 2023; Hamre & Pianta, 2001; Riley, 2010; van Ryzin, 2010; Verschueren & Koomen, 2012; Zajac & Kobak, 2006). However, the child–adult relationship in primary and secondary education becomes an adult–adult relationship in higher education (Hagenauer & Volet, 2014).

Attachment theory in relation to TSR suggests that students' perceptions of teachers' caring and warmth can help build relationships and, in turn, promote academic success (Cushman & Cowan, 2010; Berman-Young, 2014; Niemiec & Ryan, 2009; Roorda et al., 2011). Bowlby's theory holds that teachers who have caring, empathetic relationships are more likely to support students' emotional and psychological needs, thereby contributing to improved educational outcomes (Connell & Wellborn, 1991; Garcia-Rodriguez et al., 2023).

### **Attachment After Infancy and Childhood.**

Research from Bartholomew and Horowitz (1991) shows that the attachment styles that develop in infancy and childhood follow individuals throughout their lives, and the attachment style developed in the child–parent relationship influences future relationships (Ainsworth, 1989). Further research by Fleming (2008) focuses on attachment styles in adult education,

specifically the types best suited to successful learning. The author states that one's attachment style plays an important role in the interpersonal engagements between students and teachers in adult education. Students and teachers with healthier attachment styles may be more likely to develop stronger teacher–student relationships and therefore create more learning opportunities (Fleming, 2008).

### **The Interpersonal Nature of the Teacher–Student Relationship.**

Attachment theory emphasizes the need for students to have a secure, supportive environment from which they can feel safe to explore, learn, and complete academic tasks (Connell & Wellborn, 1991). Secure and reciprocal attachments are important for students to engage with teachers, peers, and subject matter, and to develop healthy self-concepts and a sense of well-being (Cornelius-White, 2007). According to this theory, when students are emotionally connected to their teachers, they are more likely to be receptive to learning, actively engage in class, and develop higher levels of academic achievement (Hamre & Pianta, 2006). Frymier and Houser (2000) expanded on the perspective that the teacher–student relationship is an interpersonal relationship, one that requires emotional support and a feeling of closeness.

Further, Pianta (2001) explains the attachment-driven dimensions of the TSR as closeness, conflict, and dependency. Conflict relates to the teacher's perspective on whether the relationship is effective; closeness is the teacher's perception of warmth and affection; and dependency is the student's reliance on the teacher. These components further demonstrate the attachment nature of student–teacher relationships and confirm that a student–teacher relationship is a close, emotional one that requires trust and safety.

### *Self-Determination Theory*

A secondary framework used in numerous other studies to examine the correlation between TSRs and academic success is Self-Determination Theory (SDT). Developed by psychologists Ryan and Deci (2000a), the Self-Determination Theory is a theoretical framework for understanding human motivation and learning. SDT proposes that humans have three basic psychological needs: Autonomy, competence, and relatedness (Ryan & Deci, 2000a). Jang et al. explain that students' psychological needs are a "requisite nutriment for students' active engagement and positive school functioning" (2009, p. 649). When these basic psychological needs are satisfied, people tend to experience higher levels of intrinsic motivation, psychological well-being, and learning (Connell & Wellborn, 1991; Ryan & Deci, 2000; Skinner & Belmont, 1993).

#### **The Three Basic Psychological Needs in Education.**

In the context of education, autonomy refers to a student's ability to express themselves freely and maintain independence in their education. Students who are highly self-motivated demonstrate stronger academic performance and greater satisfaction in their education (Guay, 2022). Jang et al. (2009) found that public school students in South Korea were more intrinsically motivated when they experienced feelings of autonomy and competence in the classroom. When teachers create an environment where their autonomy is supported, and students feel safe to express themselves, they foster an intrinsic motivation to engage with the material (Chirkov & Ryan, 2001; Connell & Wellborn, 1991; Deci & Ryan, 1985; Guay, 2022) and have higher self-esteem and perceived competence (Ryan & Grolnick, 1986).

Competence refers to a student's need to feel they are capable and successful in their activities and academic endeavors. When students receive constructive feedback and

encouragement, they are likely to feel more capable of mastering challenging material (Niemiec & Ryan, 2009)

Relatedness refers to a student's ability to form meaningful relationships with others and to feel connected to and cared for by them. A sense of connection and relatedness contributes to a feeling of belonging in the classroom where a student feels that the teacher genuinely likes, respects, and values them (Niemiec & Ryan, 2009). When students feel that their teachers care about them and their academic progress, they are more likely to feel confident in learning tasks. Conversely, students who feel disconnected may have diminished motivation, lower performance, and reduced well-being (Niemiec & Ryan, 2009). Previous research provides evidence that relatedness is important for optimal student functioning in the classroom and has also been proposed as the most critical component of student engagement (Pianta, 1999). This theory posits that fulfilling individuals' basic psychological needs is crucial for fostering intrinsic motivation and engagement in academic settings.

#### **Self-Determination Theory and Motivation.**

Ryan and Deci (2000a) state that all students have inherent motivational traits for high-quality academic engagement, but that the learning environment can encourage or discourage engagement and learning (Niemiec & Ryan, 2009; Skinner & Belmont, 1993).

As such, SDT is critical to reference in education, where students' natural motivation to learn can represent one of the greatest resources educators can cultivate (Niemiec & Ryan, 2009).

Social contexts that support an individual's three psychological needs help to maintain intrinsic motivation and promote higher levels of internalization (Ryan & Deci, 2000a). Inversely, contexts that hinder the fulfillment of basic needs minimize individuals' motivation, performance, and development (Ryan & Deci, 2000b).

Viewing education through the lens of SDT highlights the importance of fulfilling students' basic psychological needs during the learning process (Connell & Wellborn, 1991; Ryan & Deci, 2000; Skinner & Belmont, 1993). Teacher-emotional support builds positive teacher–student relationships, an essential component for developing social interaction skills and academic competence in the classroom environment (Mahona & Demetria, 2020). If the teacher meets students' psychological needs, students will be more satisfied with the learning environment, leading to greater engagement in the learning process and better academic outcomes (Hamre & Pianta, 2001; Guay, 2022; Niemiec & Ryan, 2009).

#### Elements of the Teacher–Student Relationship

Creating positive teacher–student relationships is a central priority in educational settings, as these relationships contribute to student engagement, learning, and academic success (Roorda et al., 2011; Xie & Derakhshan, 2021; Zhou, 2021). Strong teacher–student relationships are often fostered through emotional and social support, which helps create a positive classroom climate characterized by safety, empathy, emotional expression, and mutual respect (Hamre & Pianta, 2001; Jennings & Greenberg, 2009; Roorda et al., 2011; Schuck et al., 2021; Xie & Derakhshan, 2021). Together, these relational elements provide an important foundation for students' academic and psychological development.

#### *Emotions*

Many researchers claim that teaching is inherently an emotional and moral process, in which teachers view emotions, emotional understanding, caring, and emotional displays in teaching as necessary elements of teaching (Bullough, 2011; Fitzmaurice, 2008; Hargreaves, 1998; Oplakta, 2007; Wang, 2022). A teacher's authentic display of emotions fulfills a relevant function in establishing genuine and caring relationships with students and is expected to have a

significant impact on the quality of their teaching practice and the emotional climate in the classroom (Jennings & Greenberg, 2009). Recent empirical research has shown that teaching is also experienced emotionally in higher education settings (Hagenauer & Volet, 2014; Postareff & Lindblom-Ylänne, 2011).

As Pianta (1999) suggests, “No amount of focus on academics, no matter how strong or exclusive, will substantially change the fact that the substrate of classroom life is social and emotional” (p. 170). Titsworth and colleagues (2013) argue that emotional connections in the classroom are “knowledge-producing resources” essential to fostering effective learning experiences for both students and teachers. Students who feel emotionally supported and connected to their teachers may perceive their learning more positively, which can contribute to deeper engagement and understanding (Patrick et al., 2007; Titsworth et al., 2013).

These statements align with multiple researchers who consider social and emotional environments in the classroom to be an important dimension and prerequisite of the higher education experience (Goktas & Kaya, 2023; Patrick et al., 2007; Quinlan, 2016). Ruzek and colleagues (2016) found that in emotionally supportive classrooms, students can experience more opportunities to practice autonomy, which is linked to higher engagement, motivation, and mastery of the content. Finally, Kincade et al. (2020), in a meta-analysis of practices that strengthen teacher–student relationships, identified validating students’ emotions as one of the most important relational practices.

Research consistently supports the idea that emotional connections in the classroom act as essential resources for learning, with emotionally supportive environments linked to increased student engagement, motivation, and academic success (Patrick et al., 2007; Quinlan, 2016; Ruzek et al., 2016; Titsworth et al., 2013; Tormey, 2021). Collectively, this body of literature

suggests that emotional support is not peripheral to teaching, but rather a central component of teacher–student relationships that contributes to student engagement, motivation, and academic success.

### ***Teacher Emotional Intelligence***

Teacher Emotional Intelligence (EI) has also been identified as an important factor in the development of positive teacher–student relationships. EI refers to the ability to perceive, understand, use, and manage emotions effectively (Salovey & Mayer, 1990). In educational settings, studies have shown that teachers with stronger social and emotional competence are more likely to establish nurturing relationships with their students, leading to better student interactions (Friedman, 2014; Jennings & Greenberg, 2009). These interactions, therefore, affect the quality of the TSR, leading to improved classroom management and academic achievement (Jennings & Greenberg, 2009; Poulou, 2017; Sutton & Wheatley, 2003; Wang, 2022).

In a study assessing student perceptions of teachers’ social-emotional support, the authors discovered that emotionally supportive behaviors were the strongest predictor of students’ views of high-quality relationships with their teachers (Prewett et al., 2019). Similarly, Poulou (2017) found that teachers’ perceptions of personal skills and emotional intelligence (EI) were key predictors of the quality of teacher–student relationships. Teachers with high emotional intelligence, social and psychological maturity tend to be more caring and foster a supportive emotional atmosphere in the classroom (Friedman, 2014; Jennings & Greenberg, 2009; Poulou, 2017). Conversely, a lack of emotional self-awareness can hinder an individual’s ability to establish and maintain healthy interpersonal relationships (Rahman et al., 2024). For teachers, this often results in poorer student relationships and lower academic achievement (Rahman et al., 2024). The social-emotional traits of teachers are essential for the quality of teacher–student

relationships and students' psychosocial well-being (Gunter et al., 2012; Jennings & Greenberg, 2009; Rimm-Kaufman & Hamre, 2010). These qualities have important implications for teaching effectiveness (Zembylas, 2007) and student success (Friedman, 2014; Gasser et al., 2018; Goktas & Kaya, 2023; Ladd et al., 2000; Shen et al., 2024; Skinner et al., 2008; Sutton & Wheatley, 2003; Wang, 2022).

The studies above provide evidence of the importance of teachers' emotional intelligence, which can be a positive factor in fostering positive teacher–student relationships. By prioritizing emotional intelligence in teaching practices, educators can create supportive, engaging, and emotionally enriching classroom environments that promote both academic and personal growth (Friedman, 2014; Poulou, 2017; Reyes et al., 2012). Taken together, the literature suggests that teachers' emotional intelligence is a significant relational resource that supports both teacher effectiveness and student engagement.

#### Empathy, Warmth, and Caring

Empathy, warmth, and caring are consistently identified as core interpersonal qualities of effective teacher–student relationships. The educator–learner relationship is often described as one grounded in mutual respect, trust, empathy, warmth, and genuine concern for students (Aldrup et al., 2018). Anderson and Carta-Falsa (2010) similarly noted that both teachers and students often desire relationships characterized by openness, support, comfort, and safety. Such relationships have been associated with increased motivation, learning, critical thinking, and ethical care toward others (Beckman & Lee, 2009; Sawatzky et al., 2009).

Empathy in the classroom has long been recognized as a significant aspect of teacher–student relationships (Gasser et al., 2018) and plays an integral part in the role of teaching (Meyers et al., 2019). In educational settings, empathy refers to teachers' ability to deeply

understand students’ personal and social circumstances, as well as understand their perceptions towards the learning process (Meyers et al., 2019). Baron-Cohen and Wheelwright (2004) define empathy as including both affective and cognitive components. Cognitive empathy in education refers to taking students perspectives and understanding their personal and social situations, while affective empathy involves “experiencing the feelings of or with another person” (Bouton, 2016; Decety & Yoder, 2016; Noddings, 1986), and “the ability to walk in another’s shoes” (Wiggins & McTighe, 2005; Meyers et al., 2019). Empathy is also argued to be relevant for teachers’ professional effectiveness, given the high social and emotional demands inherent to daily interactions with students (Brackett & Katulak, 2007; Jennings & Greenberg, 2009).

A study referenced by Kincaide et al. (2020) ranked the top practices that strengthen TSRs from the student perspective. Findings indicated that getting to know students personally ranked sixth, and expressing care ranked eleventh as important to developing and strengthening student–teacher relationships. Care and credibility established by the teacher, feedback offered, and communication were also found to influence teacher–student relationships from the students’ perspective in another study (Amerstorfer & Freiin von Münster-Kistner, 2021).

Empathy has also been shown to directly affect students’ attitudes towards academic and social motivations (Cornelius-White, 2007; Urdan & Schoenfelder, 2006). Thus, students will respond with greater engagement and effort when they believe their teachers like, care about, and value them. Several empirical studies suggest that students who perceive their teachers as caring are more engaged in the classroom, resulting in higher academic engagement and achievement (Bakadorova & Raufelder, 2018; Hughes et al., 2012; Lee, 2013; Wang & Eccles, 2013). den Brok and colleagues (2002) found that student’s perception of closeness with their teacher was a predictor of motivation, while Berman-Young (2014) finding that students’ perception of teacher

caring and support accounted for 36% of the variance in academic engagement in their study. Wilson (2006) found that students' perceptions of their professors' positive attitudes toward them (e.g. concern, desire for students to succeed) accounted for 58% of the variability in student motivation, 42% of the variance in course appreciation, and 60% of their attitude about the instructor. A meta-analysis by Cornelius-White (2007) revealed a substantial association between empathy and warmth and student affective and cognitive outcomes (participation, engagement, critical thinking, final grades and GPA, attendance and dropout rates). In fact, they found that empathy and warmth were more strongly associated with student outcomes than most other person-centered variables.

Similarly, Iqbal (2022) found that a student's positive perception of their TSR enhanced their perception of their learning outcome but did not predict final grades, unlike Cornelius-White (2007). This suggests that teacher–student relationships play a substantial role in students' subjective academic experiences, even if they don't always directly impact quantifiable outcomes such as grades (Cornelius-White, 2007).

Teacher qualities like empathy and warmth can play an important role in fostering supportive interactions with students (Aldrup et al., 2018; Roorda et al., 2011), which are further conducive to student participation, engagement, self-esteem, and academic success, which lead to increased academic performance (Bakadorova & Raufelder, 2018; Hughes et al., 2012; Lee, 2013; Wang & Eccles, 2013). Overall, the findings demonstrate that traits of empathy and caring in instructors are particularly influential in fostering student engagement and achievement (Cornelius-White, 2007).

### *Classroom Climate*

Classrooms are fundamentally social contexts where students interact and build relationships with their teachers and with their classmates. These relationships with teachers are crucial in influencing the overall classroom climate, including both the academic and emotional environment (Daniels & Shumow, 2003; Frisby & Martin, 2010; Jia et al., 2009; Pianta et al., 2008; Ryan & Patrick, 2001; Urdan & Schoenfelder, 2006; Zainullah & Riniati, 2023). The teacher–student relationship is critical to student learning, as it makes learners feel safe and connected to their educators (Kunter et al., 2013).

La Paro et al. (2004) found that an optimal classroom climate is characterized by teachers' appropriate emotional expression, respectful communication, and responsiveness to individual differences and students' needs. Emotionally sensitive teachers can foster a positive learning environment by demonstrating that the classroom is a safe and valuable place to be. The teachers who are emotionally sensitive and supportive therefore increase enjoyment, engagement, and academic achievement in their classrooms (Curby et al., 2009; Jennings & Greenberg, 2009; Marks, 2000; Rimm-Kaufman et al., 2005; Rimm-Kaufman & Sandilos, 2011; Schonert-Reichl, 2017; Skinner & Belmont, 1993; Wang, 2022; Wentzel, 1998; Woolley et al., 2009). In contrast, if learners do not feel safe, welcome, or comfortable in the learning context, they will not fully engage in learning activities (Demetriou et al., 2009). Building on this argument, Gillies (2004) and Reyes et al. (2012) provide strong evidence showing the significance of a positive classroom climate in student engagement and academic performance.

Teachers undoubtedly play an important role in shaping the classroom environment (Daniels & Shumow, 2003; Frisby & Martin, 2010; Jia et al., 2009; Pianta et al., 2008; Ryan & Patrick, 2001; Urdan & Schoenfelder, 2006; Zainullah & Riniati, 2023). Because classrooms are

fundamentally social contexts (Gehlbach, 2010), improving these crucial teacher–student relationships may be a particularly promising approach to improving student outcomes. Overall, the literature indicates that emotionally supportive teacher–student relationships help create classroom climates that foster engagement, exploration, and academic success (Frisby & Martin, 2010; Gillies, 2004; Reyes et al., 2012).

#### The Mediated Relationship Between Teacher–Student Relationships, Student Engagement, and Academic Achievement

Student engagement, motivation, and academic achievement are often viewed as individual attributes or traits rather than as outcomes of how teachers structure their teaching (Urduan & Schoenfelder, 2006). However, educational researchers have always maintained that teacher–student relationships rank highly among the most influential educational variables over time and across educational contexts (Hattie, 2009). Three meta-analyses (Lei, 2018; Quin, 2016; Roorda et al., 2011) and one systematic review (Cornelius-White, 2007) provide evidence of a correlation between students' favorable relationships with their teachers and subsequent engagement and performance. Thus, in the context of education, it is necessary to analyze the correlations between teacher–student relationships and their impact on students' academic engagement and achievement.

#### *The Relationship Between Teacher-Student Relationships, Engagement, and Achievement*

In multiple studies simultaneously comparing TSRs and achievement, authors' findings suggest that the effect of TSRs on academic achievement is partly due to academic engagement, where student engagement mediates the effect of student–faculty interactions on academic performance (Connell & Wellborn, 1991; Furrer & Skinner, 2003; Roorda et al., 2017; Zhao & You, 2024). Several studies have simultaneously analyzed psychological engagement and

academic grades as student outcomes and found each was positively associated with TSRs (Dennie et al., 2019; Inman, 2019; Lee, 2013; Martin & Collie, 2019; Murray, 2009; Zimmer-Gembeck et al., 2006).

### ***The Relationship Between Teacher–Student Relationships and Academic Achievement***

Many empirical studies have discovered a significant correlation between students' perception of positive TSR and academic achievement (Ansari & Khan, 2020; Fan, 2012; Fraser et al., 2010; Inman, 2019; Komarraju et al., 2010; Micari & Pazos, 2012; Witherspoon, 2011; Zhou, 2021).

Two similar studies examining faculty–student relationships and academic achievement in higher education are Komarraju et al. (2010) and Micari and Pazos (2012). Both studies found that positive faculty–student relationships had significant effects on student GPA, but the main difference is Komarraju et al. (2010) investigated this topic from a general education course standpoint, while Micari and Pazos (2012) specifically investigated a difficult science course.

In this study examining the impact of the TSR in a highly challenging organic chemistry college course, Micari and Pazos (2012) found that students who felt a stronger connection to the professor tended to have greater confidence and received higher course GPAs. They note the importance of developing a strong TSR in challenging courses where students often have fewer personal resources to rely on for support and motivation.

Furthering the previous discussion of Ullah and Wilson (2007), the authors analyzed three years of data from 2,160 students, which was based on the Survey of Student Engagement, which assessed student perceptions of interactions with faculty and staff, student perceptions of achievement via reading, writing, and actual GPA and ACT scores. Results indicated positive correlations between quality interactions with faculty and GPA, and, through a series of

regression analyses, showed that quality interactions with faculty and course participation were significant predictors of GPA. In a similar manner, Gunuc and Kuzu (2014) examined the relationships between quality faculty–student interactions, sense of belonging, and academic achievement. Regression results revealed that quality faculty–student interactions, sense of belonging, and student engagement served as predictors of GPA scores.

Another study that examined student–faculty interactions and GPA was performed by Gnoleba Seki (2023). The findings demonstrate there was a significant positive correlation between faculty–student interactions and academic achievement (GPA), where eight of the nine measurement scales positively correlated with GPA. These findings support the notion that the engaging experiences that students have with faculty can increase academic achievement (Gnoleba Seki, 2023).

Finally, in a meta-analysis done by Goktas & Kaya (2023) they examined positive teacher–student relationships from 18 studies and their effect on academic achievement. They concluded there was a moderate positive correlation between positive teacher relationships and overall student academic achievement. In a similar manner, Hattie (2009), in his synthesis of 800 meta-analyses, identified various categories of factors that relate to student achievement. Among contributions to student learning directly from teachers, the most influential factor identified was the strength of teacher–student relationships. Of the 131 total contributors identified, this factor yielded the 11th largest effect size (Hattie, 2009). High-quality, positive TSRs have been found to have overall small to medium positive relationships with academic achievement (Goktas & Kaya, 2023; Gunuc & Kuzu, 2014; Roorda et al., 2011; Ullah, 2007; Zainullah & Riniati, 2023).

Pianta (1999) asserts that students who have close relationships with caring teachers are more engaged and achieve higher academic levels than students who do not enjoy such

relationships. These studies underscore the importance of the TSR in supporting student academic engagement and success, where TSRs have been shown to predict higher GPA and various other academic outcomes (Goktas & Kaya, 2023; Gnoleba Seki, 2023; Gunuc & Kuzu, 2014; Hattie, 2009; Komarraju et al., 2010; Micari & Pazos, 2012; Ullah & Wilson, 2007).

### ***The Relationship Between Teacher–Student Relationships and Motivation***

Student–faculty partnerships are the foundation upon which learning rests and have emerged as a significant area of focus in higher education due to their positive effects on multiple learning outcomes (Camp, 2011; Saucier et al., 2022). Several studies show that regular, meaningful interactions with faculty can significantly impact cognitive development during college, arguably one of the most essential outcomes of college education (Kim & Lundberg, 2016; Pascarella & Terenzini, 2005).

The findings from Frymier (2007) and Frisby (2009) indicate that when students were satisfied with their relationship with their instructor, they reported higher affective and cognitive learning, as well as greater motivation and class satisfaction. These authors and Zhou (2021) also found that perceived instructor support was positively correlated with the frequency of student participation, which in turn was positively correlated with a feeling of affect towards the content (Frisby, 2009; Zhou, 2021).

In addition to cognitive growth and participation, research has also revealed a direct relationship between perceived instructor-student rapport and affective learning, satisfaction, and state motivation (Frisby & Myers, 2008). In particular, the connection between teachers and students is one of the most significant factors affecting students' motivation concerning academic achievements (Tao et al., 2021). In a study examining the impact of the TSR in a difficult college course, Micari and Pazos (2012) found that TSRs can increase student

confidence and motivation, while Kim and Lundberg (2016) found that positive TSRs can increase students' academic self-challenge.

Research in recent decades has consistently identified TSRs as a key contributor to students' wellbeing (Koster et al., 2005; Poulou, 2020; Zainullah & Riniati, 2023), cognitive and affective learning, (Frymier, 2007; Frisby, 2009; Kim & Lundberg, 2016) motivation, (Frymier, 2007; Frisby & Myers, 2008; Frisby, 2009; Leenknecht et al., 2020) participation, (Frymier, 2007; Frisby, 2009) and satisfaction with the content (Frisby, 2009; Gunuc & Kuzu, 2014; Kim, 2015; Zhao & You, 2024; Zhou, 2021)

### Teacher–Student Relationships in Higher Education

The well-established benefits of TSRs in earlier education, such as increased student engagement, motivation, and academic success, extend into higher education, where faculty-student interactions remain critical for fostering a sense of belonging and persistence in their academic career (Hagenauer & Volet, 2014; Roorda et al., 2011; Tinto, 1993). In support of this view, student development theorists Chickering and Reisser (1993) argue that relationships with faculty are among the most important relationships for students to form in college. In their work, “Seven Principles for Good Practice in Undergraduate Education,” they identify teacher rapport as their first principle, finding that student-faculty contact in and out of classes is the most important factor in student involvement and motivation.

In higher education, TSRs influence students' willingness to seek academic support, participate in intellectual discussions, and develop resilience in overcoming academic challenges, all of which are essential for success in rigorous academic environments (Komarraju et al., 2010; Micari & Pazos, 2012). Strong TSRs contribute to increased intrinsic motivation, as students who feel valued and supported by faculty are more likely to take intellectual risks, remain

engaged in coursework, and persist despite academic setbacks (Deci & Ryan, 2000a; Roorda et al., 2011). Research also suggests that students who perceive their professors as approachable and invested in their success demonstrate higher levels of self-confidence, academic resilience, and satisfaction with their educational experience (Micari & Pazos, 2012; Pascarella, 2006).

Ultimately, research consistently links positive Teacher-Student Relationships with student competence and long-term academic success. Studies by Birch and Ladd (1996) and Hughes, Cavell, and Jackson (1999) affirm that strong TSRs are reliable predictors of student growth and achievement.

### ***Interpersonal Characteristics of Effective Teaching***

Buskist and his colleagues (2002) asked a sample of psychology undergraduates and a sample of faculty members to list characteristics of master teachers at the university level. In order of importance, the undergraduates described the following traits: (3) displaying understanding, (4) being approachable and personable, and (5) being respectful toward students. In a very similar study, Schaeffer et al. (2003) also evaluated the characteristics of master teaching in the college setting. The findings reveal that faculty and students agreed on 8 of the top 10 characteristics: (a) approachable, (b) creative and interesting, (c) encouraging and caring, (d) enthusiastic, (e) flexible and open-minded, (f) knowledgeable, (g) realistic expectations and fair, and (h) respectful. It is important to note that only one of the top eight (knowledgeable) relates to the instructor's academic knowledge or performance, while seven of the top eight elements of overall master teaching are interpersonal traits. These studies demonstrate that students significantly value their personal relationship with their instructor built on personal connection, mutual respect, and caring.

*Teacher-Student Relationships and the First Year Experience*

This need for a strong relationship with the teacher is especially evident during the first year of college, when faculty often mentor students, help them adjust to the demands of higher education, and foster a sense of belonging (Palmer et al., 2009). The first year of college is often a period of uncertainty, during which students must form new relationships, adapt to increased academic expectations, and develop a sense of independence (Pittman & Richmond, 2008; Tinto, 1993). TSRs can serve as anchors during this transition, providing students with guidance, reassurance, and a structured support system (Hagenauer & Volet, 2014; Wilcox et al., 2005). Faculty who actively engage with first-year students help them develop confidence in their academic abilities, fostering stronger self-efficacy and motivation to persist through challenges (Komarraju et al., 2010; Pascarella, 2006). This role becomes particularly important for first-generation college students or those from underrepresented backgrounds, who may rely more heavily on faculty for guidance and encouragement in navigating higher education (McGivney, 1996; Palmer et al., 2009; Pascarella, 2006).

The first year of college represents a critical transition period during which students are especially vulnerable to academic, social, and emotional challenges. Positive and consistent interactions with faculty not only foster academic persistence but also help students adjust to the university environment, particularly when they feel overwhelmed or uncertain. Li (2022) found that the quality of TSRs in the early months of college predicted students' academic adaptation over time, underscoring the developmental significance of these relationships. Similarly, Tygret et al. (2022) demonstrated that first-year students who felt seen and supported by faculty—through simple actions like asking students what they wished their teacher knew—experienced greater emotional safety and connection.

Conversely, without these relationships, students may struggle to acclimate to the academic rigor and social dynamics of college, increasing the likelihood of disengagement or attrition (Tinto, 1993; Palmer et al., 2009). Research further suggests that first-year students who report strong faculty connections are more likely to remain enrolled, demonstrate higher academic achievement, and develop a stronger commitment to their education (Furrer & Skinner, 2003; Chickering & Reisser, 1993). During this critical transition, Teacher-Student Relationships (TSRs) have been shown to significantly predict students' motivation, engagement, learning, and sense of belonging (Rivera Munoz, 2017). Collectively, these findings highlight the foundational role of TSRs in shaping first-year students' academic and personal trajectories in higher education.

### ***Decline of Closeness, Engagement, and Interactions in Higher Education***

As students grow into adolescence and beyond, less is known about the effects of students' feelings of closeness with their teachers (Roorda et al., 2011), and the emotional gap between students' perceptions of teachers and teachers' perceptions of students widens (Rimm-Kaufman & Sandilos, 2012).

In addition to a widening emotional gap, teachers' warmth also decreases as students progress through primary school, especially into secondary school, suggesting that rates of teachers' warmth continue to decline for most students in high school and beyond (Ettetal & Shi, 2020). Decreases in overall relationship quality, perceived closeness, and supportiveness are also observed as children advance from kindergarten through high school, further compromising the relationship (Feldlaufer et al., 1988; Furrer & Skinner, 2003; Karcher, 2008; O'Connor, 2010). Lastly, older students perceive their teachers to be less supportive than do younger students

(Midgley et al., 1989) and are at greater risk of experiencing negative student–teacher relationships than are younger students (Furrer & Skinner, 2003; Lynch & Cicchetti, 1997).

These early declines in warmth between younger students and teachers can also predict challenges with academic engagement later in their education. Multiple studies find that student disengagement and the lack of interactions often persist through all levels of one’s academic career (Gnambs & Hanfstingl, 2016; Hidi & Harackiewicz, 2000; Lazowski & Hulleman, 2016; Pianta et al., 2012). Klem and Connell (2004) found that by high school, an estimated 40% to 60% of students are already chronically disengaged from school, suggesting that disengagement often begins before college.

#### **Limited Quality and Quantity of Student-Faculty Interactions.**

Furthermore, multiple studies have demonstrated there is a significant lack of both quality and quantity of interactions between instructors and students in higher education. In a study of 200 undergraduates with supporting findings, Benson et al. (2005) found that only 15% of students reported developing rapport with more than half of their instructors, and one-third of students had meaningful connections with just 5% or fewer of their professors. These findings highlight not only the limited number of students who form strong connections with faculty but also a wider pattern in higher education, where meaningful interaction between students and professors remains scant (Cuseo, 2007; Kuh & Hu, 2001).

In addition to the small number of students experiencing quality TSRs, the number of interactions between students and professors in higher education is generally limited. Existing research suggests that student interactions with faculty are overall infrequent, with one study finding 50% of students met with their professors only once during the semester (Anaya & Cole, 2001; Delaney, 2008). Notably, Delaney (2008) also found that first-year students who were

more satisfied with the amount of faculty contact were also more satisfied with the quality of instruction. These concerning statistics reveal a concerning lack of interpersonal connection in higher education classrooms and underscore the need for greater emphasis on college faculty forming positive connections and relationships with their students.

### *Institutional Restrictions*

Several organizational shifts have compounded this issue within postsecondary education, making it more difficult for faculty to build personal connections with students and cultivate TSRs (Spilt et al., 2012). The “massification” of higher education has led to larger class sizes and rising student-to-staff ratios, reducing opportunities for individualized attention and relationship-building (Hornsby & Osman, 2014; Wilson & Holligan, 2013). Additionally, the increasing emphasis on faculty research output over teaching and mentoring has created a professional culture in which relational engagement with students is often deprioritized (Arum & Roksa, 2011; Chory & Offstein, 2017). Alongside these organizational challenges, many university instructors receive little or no formal training in relationship-building with students and are instead evaluated primarily on their scholarly productivity and disciplinary expertise (Evenbeck & Johnson, 2012; Kuh et al., 1991). These pressures of tenure-track positions and research output make it difficult for faculty to dedicate time to fostering personal relationships with students, further exacerbating the disconnect between instructors and learners (Chory & Offstein, 2017; Kuh et al., 1991). As a result, students may struggle to feel connected or supported in academic environments that prioritize content delivery over interpersonal connection.

### **Lack of Faculty Training.**

A contributing factor to the TSR research gap is that higher education faculty are rarely trained in building relationships with students. Unlike K-12 educators, university faculty are often not taught to spend time with students or to provide emotional support and personal development advice (Chory & Offstein, 2017). Instead, college faculty are primarily trained to focus on research, subject-matter expertise, and scholarship (Arum & Roksa, 2011; Chory & Offstein, 2017; Evenbeck & Johnson, 2012; Kuh et al., 1991). As a result, many faculty members struggle to balance research demands with meaningful student interactions, limiting their ability to provide mentorship, emotional support, and personal development guidance (Chory & Offstein, 2017; Evenbeck & Johnson, 2012).

### *Summary*

In summary, the teacher-student relationship (TSR) is a fundamental yet often overlooked component of higher education that significantly impacts student engagement, achievement, and sense of belonging. While extensive research has been conducted on TSRs in primary and secondary education, there remains a notable gap in understanding how these relationships function and evolve in university settings (Hagenauer & Volet, 2014; Karpouza & Emvalotis, 2019; Roorda et al., 2017). Other recent studies in the field of education have demonstrated that improving and maintaining positive interpersonal relationships between students and teachers is especially essential in higher education (Garcia-Moya et al., 2019; Schlesinger et al., 2017; Xerri et al., 2018). This need for building relationships with students in higher education should not be ignored, as it can have significant positive effects on student academic engagement and achievement (Garcia-Moya et al., 2019; Schlesinger et al., 2017; Xerri et al., 2018).

The decline in teacher warmth, engagement, and interaction as students progress through their academic journey highlights the urgency of addressing this issue in higher education

(Ettetal & Shi, 2020; Rimm-Kaufman & Sandilos, 2012). Despite evidence suggesting that positive TSRs contribute to student motivation and success (Furrer & Skinner, 2003; Guerra-Martin et al., 2017; Pascarella, 2006), many students fail to form meaningful connections with their instructors, often due to institutional structures that prioritize research over student interaction (Arum & Roksa, 2011; Chory & Offstein, 2017; Kuh et al., 1991).

The absence of formal training in relationship-building for university faculty, coupled with institutional pressures that prioritize research over student engagement, contributes to a concerning disconnect between instructors and learners (Arum & Roksa, 2011; Chory & Offstein, 2017). Yet the first year of college, often marked by transition, vulnerability, and identity formation, underscores the urgent need for strong faculty-student connections (Palmer et al., 2009; Pittman & Richmond, 2008). These relationships are not only central to student retention, motivation, and academic performance (Furrer & Skinner, 2003; Komarraju et al., 2010) but also play a pivotal role in shaping students' confidence, sense of belonging, and long-term success (Pascarella, 2006; Tinto, 1993). Given the critical role that faculty play in fostering academic and personal development, further research is needed to explore how TSRs are developed in higher education. These relationships help students develop essential personal, professional, and academic skills that extend far beyond classroom instruction (Kim & Lundberg, 2016; McGivney, 1996; Tinto, 2002).

### Summary

This chapter reviewed the theoretical and empirical literature related to teacher–student relationships (TSRs), student motivation, engagement, and academic achievement. Attachment Theory and Self-Determination Theory provided the theoretical foundation for understanding how supportive interpersonal relationships between instructors and students may influence

students' psychological needs, motivation, and academic outcomes (Bowlby, 1969; Deci & Ryan, 2000a; Ryan & Deci, 2000a). Within these frameworks, teacher–student relationships serve as an important relational context through which students experience emotional security, relatedness, and support, all of which contribute to engagement and learning (Connell & Wellborn, 1991; Niemiec & Ryan, 2009; Roorda et al., 2011).

The literature further demonstrated that positive TSRs are characterized by emotional support, empathy, warmth, emotional intelligence, and a supportive classroom climate (Aldrup et al., 2018; Jennings & Greenberg, 2009; Meyers et al., 2019). Research consistently indicates that when students perceive their instructors as caring, approachable, and supportive, they are more likely to participate in class, demonstrate greater motivation, and engage more deeply in learning activities (Cornelius-White, 2007; Komarraju et al., 2010; Micari & Pazos, 2012; Roorda et al., 2011). Several studies also suggest that teacher–student relationships may influence academic achievement indirectly through increased engagement and motivation (Furrer & Skinner, 2003; Roorda et al., 2017; Zhao & You, 2024).

While substantial research affirms the importance of TSRs in primary and secondary education, their role in postsecondary settings remains significantly underexplored (Hagenauer & Volet, 2014; Roorda et al., 2017). The teacher–student relationship (TSR) is a critical yet often undervalued component of student success in higher education, encompassing emotional support, empathy, and effective communication. Furthermore, research highlights that emotionally supportive environments not only foster stronger engagement and resilience (Quinlan, 2016; Ruzek et al., 2016) but also contribute to improved academic outcomes such as GPA and retention (Goktas & Kaya, 2023; Micari & Pazos, 2012). Faculty who display empathy, care, and

emotional intelligence are more likely to build rapport and promote student persistence and well-being (Jennings & Greenberg, 2009; Poulou, 2017).

Studies consistently show that positive TSRs are associated with enhanced student motivation, engagement, and academic achievement (Gunuc & Kuzu, 2014; Ullah & Wilson, 2007), yet institutional barriers such as limited faculty training in relational pedagogy, rising student-to-faculty ratios, and research-focused faculty responsibilities hinder the development of meaningful student–faculty interactions (Arum & Roksa, 2011; Chory & Offstein, 2017). This lack of relational emphasis is particularly detrimental during the critical transition into higher education, where students are most in need of belonging and support (Palmer et al., 2009; Pittman & Richmond, 2008).

In conclusion, when students create a strong relationship with their instructor, they are more likely to engage academically, emotionally, and cognitively, which are crucial for student success in academic settings. These findings suggest that examining TSRs in higher education may provide valuable insight into student engagement and academic outcomes.

## CHAPTER THREE: METHODS

The purpose of this chapter is to outline the methodology used to investigate the extent to which student perceptions of the teacher–student relationship (TSR) predict academic achievement and motivation. This study utilized a quantitative, non-experimental, cross-sectional, predictive research design to examine whether student-reported perceptions of the teacher–student relationship (TSR) significantly predict academic achievement and motivation in a higher education context.

This study was guided by the following research questions, which examined the predictive relationship between teacher–student relationships (TSRs), academic achievement, and motivation. Based on the research established in the literature review, the hypotheses are as follows:

RQ1: To what extent do student perceptions of the teacher–student relationship (TSR) predict student academic achievement (GPA)?

H1a: Student perceptions of TSR significantly predict GPA.

H0a: Student perceptions of TSR do not significantly predict GPA.

RQ2: To what extent do student perceptions of the teacher–student relationship (TSR) predict student motivation as measured by the MSLQ and SRQ-A?

H1b: Student perceptions of TSR significantly predict student motivation scores.

H0b: Student perceptions of TSR do not significantly predict student motivation scores.

This chapter details the research design, participants, instrumentation, procedures, and data analysis methods used to address the research questions and hypotheses. It begins with a description of the study’s design and rationale, followed by a discussion of participant selection and the study's setting. The next sections describe the instruments used to assess students'

perceptions of TSRs and academic achievement, the procedures for data collection, and the ethical considerations. Finally, the chapter outlines the statistical methods used to analyze the data, including Pearson’s correlation analyses and a series of regression analyses, to evaluate the predictive relationships between TSR and student outcomes.

### Research Design

Selecting appropriate research approaches in education is crucial for ensuring that research effectively addresses the research question, contributes to credibility and reliability, and enables the application of research findings more broadly (Pregoner et al., 2024). Therefore, through careful consideration, the current study utilized quantitative, nonexperimental, correlational, predictive research methods.

#### *Quantitative Approach*

Quantitative approaches have long dominated mainstream psychological research but are also widely used in educational settings to provide objective, measurable evidence for assessing the effectiveness of interventions, measuring student performance, and evaluating educational policies (Tsang, 2014; Yue & Xu, 2019). These approaches include both experimental and non-experimental designs, in which the latter allow conclusions to be drawn about correlations between variables that can help confirm, refine, or challenge the underlying theory (Gelo et al., 2008; Pregoner et al., 2024).

These approaches explore relationships between psychological and social phenomena to describe the relationship between two or more variables of interest through statistical and numerical data to make predictions (Gelo et al., 2008; Pregoner et al., 2024). Known strengths of quantitative research are its ability to draw predictions from the data using statistical analysis and test the relationships between variables.

Some limitations to quantitative research are noted, such as providing limited depth in understanding complex phenomena or psychological experiences (Boeren, 2018), where the focus on numerical data may also lead to oversimplification, potentially reducing complex issues to mere statistics (Winkler, 2016).

### *Correlational Approach*

Similarly, in correlational research, the researcher does not control the group assignment but instead determines the nature and strength of the relationship between two variables (Asamoah, 2014; Lau, 2017; Leedy & Ormrod, 2010). Bloomfield and Fisher (2019) noted that, through a non-experimental, correlational research design, the researcher can examine variables in an exploratory manner. Further, Gall et al. (2007) state that a correlational design does not attempt to influence variables but rather seeks to understand and observe relationships among the variables being studied. In the current study, this method can help determine the patterns and strengths of associations among students' perspectives on the TSR, academic achievement, and perceptions of achievement.

The most obvious limitation of correlational research is that correlations do not imply causation; therefore, one cannot fully determine whether one variable causes a change in the other, and one has limited ability to predict outcomes (Asamoah, 2014; Curtis et al., 2016). Additionally, correlational research often ignores other confounding variables that could account for the changes in data. Despite the limitations, correlational data can predict a phenomenon, support a theory, or provide evidence for the strength and direction of relationships when a causal relationship cannot be drawn (Asamoah, 2014).

### Research Participants

The population for this study consisted of undergraduate students at a mid-sized, public university in Pennsylvania. The participants were students enrolled in a Health Science major, currently enrolled in Anatomy and Physiology I Lab for the Health Sciences course during the Fall 2025 semester. This population was selected to explore the dynamics of teacher–student relationships (TSRs) within the context of higher education, where interactions are often less structured than in K–12 settings and may vary significantly by institutional culture, class size, and instructional style (Chory & Offstein, 2017; Hagenauer & Volet, 2014).

One reason this particular course was selected for study is that it offers a high degree of instructional consistency across sections. All instructors teaching the course use an identical curriculum, including standardized PowerPoint presentations, lecture content, quizzes, and exams. This uniformity in instructional material minimizes potential confounding variables related to content delivery or assessment variation. As a result, differences in student outcomes are more likely to reflect interpersonal and pedagogical factors, rather than disparities in course content or structure. This controlled environment strengthens the study’s internal validity and enhances the ability to determine the relationship between TSR and student academic achievement, engagement, and motivation.

### *Sampling Procedure*

A convenience sampling method was employed to recruit student participants. This approach is suitable due to its practicality, alignment with existing classroom settings, and the ability to collect matched data from naturally occurring student–faculty relationships. While convenience sampling may limit the generalizability of findings, it is commonly used in exploratory studies in educational settings (Creswell & Creswell, 2018).

### ***Sample Size***

The total sample population consisted of 360 students, with the final sample resulting in 21 undergraduate students. Student inclusion criterion was that students had to be enrolled in a Health Science Major and enrolled in Anatomy and Physiology I Lab for the Health Sciences in the Fall 2025 semester.

### ***Power Analysis***

An a priori power analysis was conducted using G\*Power (Faul et al., 2009) to determine the sample size required to detect a medium effect size in a linear regression model. Using Cohen's (1988) recommended medium effect size ( $f^2 = .15$ ), an alpha level of .05, statistical power of .80, and one predictor variable, the analysis indicated that a minimum sample size of 55 participants would be required.

Because the present study obtained data from 21 participants, a post hoc power analysis was conducted to estimate the achieved statistical power. Results indicated an achieved power of .39 to detect a medium effect size under the specified parameters. Although the achieved power is below the conventional .80 threshold, the analysis provides important context for interpreting findings and is consistent with exploratory research conducted with smaller educational samples.

### **Instrumentation**

The following sections describe the instruments used to measure the study variables, beginning with the Teacher–Student Relationship Inventory (TSRI).

#### ***Teacher-Student Relationships***

Student perceptions of the teacher–student relationship were measured using the Teacher–Student Relationship Inventory (Ang, 2005). The TSRI is a 14-item multidimensional tool that offers a reliable measure of teacher–student relationship quality from the student perspective.

The TSRI captures various subscales of teacher–student relationships, including Satisfaction, Instrumental Help, and Conflict. An example item from the Satisfaction subscale is, “I am satisfied with my relationship with this instructor.” Items are rated on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). In the present study, items were averaged to compute subscale means and an overall TSRI mean score, with higher scores reflecting more positive perceptions of the teacher–student relationship. More specifically, satisfaction and instrumental help are positively associated with desirable outcomes, such as academic success and behavioral and social adjustments (Murray & Greenberg, 2000; Skinner & Belmont, 1993).

Although originally developed for younger populations, subsequent research has supported its applicability across varied educational contexts (Davis, 2003). A study of American high school students used the TSRI to examine its applicability in the United States (Suldo et al., 2014). The authors found that 11 of the 14 items were pure indicators in the U.S., though refinements (such as modifying or removing weaker items) may be needed. The TSRI was selected for this study because it operationalizes teacher–student relationships as a theoretically meaningful, multidimensional construct and has been used across varied educational contexts.

### **Scoring Procedure.**

Consistent with the validated structure of the TSRI, subscale scores were computed for Satisfaction, Instrumental Help, and Conflict by calculating the mean of the items within each subscale. In addition, a TSRI (mean) score was computed to represent overall perceived teacher–student relationship quality. Given the study’s sample size ( $N = 21$ ), the TSRI total score served as the primary TSR predictor in the primary regression models, and TSRI subscales were

examined in exploratory follow-up analyses. To maintain parsimony and reduce multicollinearity risk, TSRI subscales were evaluated in separate exploratory regression models, which allowed for clearer identification of which relational dimensions are most strongly associated with academic and motivational outcomes.

### **Validity and Reliability.**

Evidence supports the TSRI's three-factor structure and internal consistency. In Ang's (2005) validation work, exploratory and confirmatory analyses supported the three-factor model (Satisfaction, Instrumental Help, Conflict), with strong model fit indices reported.

Ang (2005) also reported strong internal consistency for the three subscales, Internal consistency estimates for the scores on the three TSRI factors were as follows: Satisfaction = .84, Instrumental Help = .94, and Conflict = .81. In Suldo's study in the United States, Internal consistency reliability was strong for all three subscales (Satisfaction:  $\alpha = .91$ ; Instrumental Help:  $\alpha = .85$ ; Conflict:  $\alpha = .84$ ). Subsequent work examining the TSRI in U.S. samples has provided additional support for its use outside the original context, while also noting that minor refinements may be warranted in some settings (Suldo et al., 2014).

For the present study, internal consistency reliability for TSRI scores was evaluated within the sample using Cronbach's alpha for the TSRI total score and for each subscale (Satisfaction, Instrumental Help, Conflict). Results indicated strong internal consistency for the Satisfaction subscale ( $\alpha = .873$ ), good internal consistency for the Instrumental Help subscale ( $\alpha = .815$ ), and lower internal consistency was demonstrated for the Conflict subscale ( $\alpha = .512$ ).

### ***Academic Achievement***

Academic achievement was operationalized as students' self-reported final course grade in the associated course. Students reported either their expected final grade (if submitted prior to

official grade release) or their received final grade. Letter grades were then converted to a grade-point equivalent (0.0–4.0 scale) using the university’s official grading system. This converted grade-point value served as the continuous academic outcome variable in all analyses.

### **Scoring Procedure.**

Students accessed their course grade-point equivalent through the university’s learning management system and reported the corresponding letter grade. Reported grade scores were converted to grade-point equivalents according to institutional policy (e.g., A = 4.0, B = 3.0, etc.). These grade-point equivalents were treated as continuous variables for statistical analysis.

### **Validity and Reliability.**

Using course grade-point equivalent as a measure of academic achievement is appropriate in the context of this study, as it reflects students’ demonstrated performance within the specific instructional and relational environment. Unlike cumulative GPA, which represents performance across multiple semesters and instructors, course-level grade performance captures achievement within the same relational context in which TSR was measured. Westrick (2017) and Beatty et al. (2015) provide robust evidence that GPA is a highly reliable metric.

Considering the study’s focus on how TSRs predict student outcomes in higher education, using course GPA as a primary academic metric ensures methodological rigor and aligns with precedent in the field. Given its psychometric strength, institutional relevance, and theoretical alignment with the constructs of interest, GPA is an appropriate and defensible measure of academic success in this research. Although grades were self-reported, prior research suggests that student self-reports of academic performance are generally highly correlated with official records when reported proximal to grade release. In the present study, grades were reported immediately following course completion to minimize recall error.

### *Academic Motivation*

To fully capture the multidimensional construct of motivation, two motivation measures were selected for this study.

#### **Motivated Strategies for Learning Questionnaire (MSLQ).**

The first measure of motivation, the Motivated Strategies for Learning Questionnaire (MSLQ), was selected due to its strong psychometric validity and alignment with the goals of this research. The MSLQ, originally developed by Pintrich et al. (1991), is one of the most widely used instruments for assessing college students' motivational beliefs and self-regulated learning behaviors. Rooted in social-cognitive theory, the MSLQ evaluates how students think about their learning, regulate cognitive processes, and manage resources to meet academic demands. Given that one of the objectives of this dissertation is to determine the extent to which student perceptions of the TSR predict student motivation, the MSLQ is an especially appropriate instrument. Its multidimensional approach examines both the affective and behavioral components of student learning, offering a nuanced understanding of how relationships with faculty may shape students' motivational beliefs and their use of effective learning strategies.

Although the full instrument contains 81 items, the present study used only the motivational items (Items 1–22), comprising the Self-Efficacy, Task Value, and Intrinsic Goal Orientation subscales. The Self-Efficacy subscale measures students' beliefs in their academic capabilities (e.g., “I believe I will receive an excellent grade in this class”), the Task Value subscale assesses perceived importance and usefulness of course material, and the Intrinsic Goal Orientation subscale evaluates engagement driven by internal interest and mastery. Items are rated on a 7-point Likert-type scale ranging from 1 (not at all true of me) to 7 (very true of me).

Items within each subscale were averaged to compute mean scores, with higher values indicating stronger endorsement of the respective motivational construct.

Several researchers have employed the MSLQ to examine predictors and outcomes related to academic achievement, motivation, and engagement in higher education (Bozkurt & Ozden, 2010; Kim & Lundberg, 2016; Komarraju et al., 2010; Micari & Pazos, 2012). Studies using the MSLQ consistently demonstrate that motivational constructs such as self-efficacy and task value are significant predictors of academic performance, persistence, and the quality of students' learning strategies. Similarly, research on self-regulated learning has utilized MSLQ strategy scales to highlight the role of metacognition and effort regulation in successful academic outcomes. This extensive body of empirical support reinforces the instrument's validity and its relevance for studies exploring the motivational and strategic processes underlying student success. Given this dissertation's focus on understanding how students' perceptions of the teacher–student relationship (TSR) relate to academic achievement, engagement, and motivation, the MSLQ provides a comprehensive and validated mechanism for capturing the psychological and behavioral elements that underlie students' academic functioning.

### ***Scoring Procedure.***

Although the full MSLQ includes both motivation and learning-strategy components, only the Motivation section (Items 1–22) was utilized in the present study. Consistent with the modular structure (Pintrich et al., 1991), the MSLQ is scored and interpreted at the subscale level, as each subscale reflects a unique aspect of students' motivational beliefs and academic attitudes. In alignment with the theoretical structure of the instrument, motivation can be operationalized as five distinct subscales: Intrinsic Goal Orientation, Task Value, Control of Learning Beliefs, Self-Efficacy for Learning and Performance, and Test Anxiety. Although all

subscale scores were calculated for exploratory purposes, three subscales were designated as primary motivational outcomes based on theoretical alignment with the study framework: Self-Efficacy (competence pathway), Task Value (engagement and perceived relevance pathway), and Intrinsic Goal Orientation (autonomous engagement pathway). These subscales most directly reflect mechanisms through which supportive teacher–student relationships are theorized to predict motivation. The remaining MSLQ subscales (Control of Learning Beliefs and Test Anxiety) were examined as exploratory outcomes to provide a comprehensive motivational profile while maintaining control over model complexity. Subscale scores were computed as the mean of the items for each construct. Consistent with Self-Determination Theory, motivation subscales were analyzed to examine the role of relatedness in academic functioning.

***Validity and Reliability.***

The MSLQ provides detailed psychometric evidence, noting that internal consistency reliabilities for the MSLQ subscales typically range from .52 to .93, demonstrating acceptable to strong reliability across the motivation and learning-strategy domains (Pintrich et al., 1991). These analyses, conducted with large samples across diverse postsecondary institutions, also support predictive validity, evidenced by significant correlations between MSLQ subscales and students' final course grades (Pintrich et al., 1991).

Within the present sample, internal consistency reliability for each multi-item subscale was evaluated. The Intrinsic Goal Orientation subscale demonstrated limited internal consistency ( $\alpha = .563$ ), which is acceptable given its three-item structure and the small sample size. The Task Value subscale demonstrated strong internal consistency ( $\alpha = .893$ ). The Self-Efficacy for Learning and Performance subscale exhibited excellent internal consistency ( $\alpha = .917$ ). The Test Anxiety subscale also demonstrated strong reliability ( $\alpha = .834$ ). Overall, the MSLQ subscales

demonstrated acceptable to excellent internal consistency within this sample, supporting their use in subsequent analyses.

### **The Self-Regulation Questionnaire–Academic (SRQ-A).**

The Self-Regulation Questionnaire–Academic (SRQ-A), rooted in Deci and Ryan’s Self-Determination Theory (SDT), is a well-established instrument designed to assess the motivations behind students’ engagement in academic activities (Ryan & Connell, 1989). The SRQ-A consists of 32 items representing four regulatory styles along the self-determination continuum: External Regulation, Introjected Regulation, Identified Regulation, and Intrinsic Motivation. Items are rated on a 4-point Likert-type scale, ranging from 1 (Not at all true) to 4 (Very true), with higher scores indicating greater endorsement of that regulatory style. Subscale scores were calculated by averaging the items associated with each regulatory category.

Although originally developed for younger student populations, the SRQ-A has demonstrated adaptability across educational contexts. Recent international studies have supported its factorial structure, internal consistency, and construct validity in diverse samples, including older student populations (Gordeeva et al., 2020; Kröner et al., 2017; Silva et al., 2019). The instrument’s focus on the quality and source of motivation makes it particularly appropriate for examining how perceived teacher–student relationship quality may relate to more autonomous versus controlled forms of academic regulation. Within the framework of Self-Determination Theory, TSR may support students’ needs for relatedness and competence, thereby influencing autonomous motivation as measured by the Relative Autonomy Index.

### ***Scoring Procedure.***

The four subscales were retained for exploratory purposes and are examined to provide additional interpretive depth, but do not serve as primary outcome variables. In the present study,

the RAI served as the primary motivation outcome variable rather than analyzing each regulatory subscale independently. Consistent with recommended scoring procedures, a Relative Autonomy Index (RAI) was computed using the weighted formula:

$$\text{RAI} = (2 \times \text{Intrinsic}) + \text{Identified} - \text{Introjected} - (2 \times \text{External})$$

This approach is justified for three reasons: (a) it aligns directly with the theoretical autonomy continuum central to the study framework, (b) it reduces dimensionality in a small sample ( $N = 21$ ), and (c) it minimizes multicollinearity that may arise from simultaneous inclusion of intercorrelated regulatory subscales. Individual regulatory styles were retained for descriptive and exploratory analyses to assist in interpreting autonomy patterns when warranted.

### ***Validity and Reliability.***

The SRQ-A has demonstrated strong psychometric properties across multiple international studies, supporting its reliability and validity as a tool for measuring academic motivation. Internal consistency for the SRQ-A has consistently met acceptable standards, with Cronbach's alpha values typically ranging from .75 to .88 across its subscales (Gordeeva et al., 2020). For instance, Gordeeva et al. (2020) reported high internal reliability for all four motivational regulation types in a Russian sample of over 1,200 elementary and secondary students. Similarly, in a German sample of students aged 8 to 14, Kröner et al. (2017) confirmed the four-factor structure through confirmatory factor analysis (CFA) and demonstrated a simplex pattern that supports the scale's construct validity. Moreover, Silva et al. (2019) adapted the SRQ-A for Portuguese elementary students and provided evidence of measurement invariance across gender and grade levels, further reinforcing its structural robustness. These studies collectively support the SRQ-A's capacity to reliably differentiate among types of motivation

along the self-determination continuum, making it a valid and consistent measure for use in diverse educational contexts, including higher education settings.

In the present study, internal consistency for each subscale was measured for exploratory purposes. The External Regulation subscale demonstrated relatively low internal consistency ( $\alpha = .442$ ). The Introjected Regulation subscale demonstrated acceptable internal consistency ( $\alpha = .763$ ). The Identified Regulation subscale demonstrated good internal consistency ( $\alpha = .783$ ). The Intrinsic Regulation subscale demonstrated modest internal consistency ( $\alpha = .565$ ). Overall, the identified and introjected regulation subscales demonstrated acceptable reliability, whereas the external and intrinsic regulation subscales showed lower internal consistency within this sample.

#### Operational Definitions of Variables

Academic achievement was operationalized as course GPA, treated as a continuous variable. The teacher–student relationship was operationalized as student-reported relational quality as measured by the Teacher–Student Relationship Inventory (Ang, 2005). Motivation was operationalized using the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1991) and the Self-Regulation Questionnaire–Academic (SRQ-A) (Ryan & Connell, 1989). Subscale scores were computed according to published scoring procedures.

#### Rationale for Differential Use of Subscales Across Instruments

The decision to retain subscales for MSLQ and TSR while using a composite RAI for SRQ-A is theoretically and methodologically driven rather than convenience-based. The MSLQ was designed to represent distinct motivational constructs that are not intended to form a single global motivation score. The TSRI reflects multidimensional relational constructs whose components may differentially predict outcomes. In contrast, the SRQ-A explicitly permits computation of a theoretically grounded composite autonomy index that represents a position

along the self-determination continuum. Using RAI as the primary SRQ-A indicator enhances parsimony and aligns with the conceptual framework while preserving regulatory subscales for interpretive depth.

Rather than constructing multivariate models with numerous simultaneous predictors, the study employed a series of theoretically anchored simple regression models that isolate specific relational dimensions (TSR subscales) and examine their association with clearly defined primary motivational outcomes. This approach minimizes the risk of overfitting, preserves statistical power, and reduces instability in parameter estimates that commonly occur in small samples. Additionally, dimensional decisions were guided by instrument design and theory rather than convenience: the MSLQ and TSRI were retained at the subscale level to preserve construct validity, whereas the SRQ-A was summarized using the Relative Autonomy Index to reduce multicollinearity and dimensional redundancy while maintaining alignment with Self-Determination Theory.

#### Data Collection Procedures

##### *Student Recruitment and Instructions*

Students were first introduced to the study in person by the co-principal investigator during the penultimate (second-to-last) week of the Fall 2025 semester. During this announcement, the co-principal investigator provided a brief overview of the study's purpose, the voluntary nature of participation, and the procedures involved. This message reiterated the study's purpose and outlined the steps for voluntary participation.

Then, the following Monday, the co-principal investigator sent an email to all eligible students outlining the study's purpose, the voluntary nature of participation, the survey and consent statement, and the procedures involved (Appendix A, B, and C). Students were given

instructions on how to complete the survey as listed in Appendix A. Finally, students completed the Teacher–Student Relationship Inventory (TSRI), Motivated Strategies for Learning Questionnaire (MSLQ), and Self-Regulation Questionnaire–Academic (SRQ-A).

Students were given 11 days (after the official email was sent) to complete the one-time survey. Students were provided the survey before the end of the semester, as many may disregard emails once the semester has concluded and still have a fresh memory of their relationship with their instructor. Students who did not complete the survey immediately received reminder emails from the co-principal investigator on Day 6, Day 8, and Day 11, encouraging their participation before the survey closed. Once students completed and submitted the survey, their participation in the study was complete. All student responses were anonymous, and academic data were self-reported by the student.

### ***Informed Consent Procedures and IRB Approval***

#### **Student Consent.**

For student participants, consent required the student to 1) complete the SurveyMonkey (containing the TSRI, MSLQ, and SRQ-A) and 2) self-report their expected or received GPA final course grade. Participants were presented with the informed consent form in the initial recruitment email and were required to read the statement and check a box indicating consent to participate before proceeding to the survey. No identifying information was collected, and student GPA data was self-reported, ensuring that the research team did not have access to student names or other identifiable details. The full consent statement provided to students is available in Appendix B.

#### **Ethical Considerations.**

Institutional Review Board approval was obtained prior to data collection. Participation was voluntary. Informed consent was obtained electronically. Data were anonymized and stored on password-protected devices.

### Statistical Analysis Plan

#### *Descriptive Statistics*

Preliminary analyses were conducted to ensure data quality and adherence to assumptions prior to hypothesis testing. All variables were examined for missing data, univariate outliers, normality, and distributional characteristics. Descriptive statistics (means, standard deviations, minimums, maximums, skewness, kurtosis) were computed for all primary and exploratory variables.

#### *Reliability Analysis*

Internal consistency reliability was evaluated for each multi-item scale using Cronbach's alpha. Primary reliability estimates were calculated for each TSRI subscale, each MSLQ subscale, and each SRQ-A subscale for exploratory purposes.

#### *Pearson's Correlation Analyses*

Pearson product–moment correlations were conducted as preliminary analyses to examine bivariate relationships among variables. Given the study's sample size ( $N = 21$ ), the number of primary hypothesis tests was intentionally limited to maintain statistical parsimony and reduce the risk of Type I error inflation. Pearson's correlation coefficients were also used to examine the strength and direction of linear relationships among TSRI scores, course GPA, and the motivation subscales. This includes preliminary analyses to explore associations between TSR perceptions and student outcomes, such as the relationship between student-reported TSR scores and course grade.

### *Assumptions of Multiple Regression*

Assumptions of linearity, independence of errors, homoscedasticity, normality of residuals, and multicollinearity were examined. Variance Inflation Factor (VIF) values greater than 10 were considered indicative of multicollinearity. Residual plots and Q-Q plots were inspected to evaluate distributional assumptions.

### *Linear Regression Analyses*

Simple linear regression analysis is the primary technique used to determine the extent to which independent variables, in this case, student perceptions of the TSR, predict continuous dependent variables such as student academic achievement (e.g., course grade) and motivation. In addition, regression can indicate the proportion of variance in each outcome variable that is explained by the predictors by examining the strength and significance of these relationships (Keith, 2019; Tabachnick & Fidell, 2019). This approach is intentionally parsimonious, given the sample size, and reduces the risk of overfitting.

To examine whether student perceptions of the teacher–student relationship predicted academic achievement, a simple linear regression was conducted with the overall TSRI mean score as the predictor and GPA as the outcome. This model (Model 1) tested whether perceived teacher–student relationship quality significantly explained variance in students' academic performance.

To examine whether student perceptions of the teacher–student relationship predicted motivational outcomes, a series of simple linear regression analyses were conducted with the overall TSRI mean score as the predictor variable. Separate models were estimated for each motivation outcome, including MSLQ Self-Efficacy, MSLQ Task Value, MSLQ Intrinsic Goal

Orientation, and the Relative Autonomy Index (RAI). This parsimonious analytic approach was selected to reduce overfitting risk given the modest sample size.

### **Exploratory Analyses**

Exploratory analyses were conducted to examine additional motivational dimensions and relational mechanisms beyond the primary hypothesis tests. These analyses included the remaining MSLQ subscales (Control of Learning Beliefs and Test Anxiety), the SRQ-A regulatory-style subscales (External, Introjected, Identified, and Intrinsic/Internal regulation), and the TSR subscales (Satisfaction, Instrumental Help, and Conflict). To address multiplicity within families of exploratory tests, Holm step-down corrections were applied where appropriate, or increased Type I error risk was explicitly acknowledged if unadjusted p-values were reported. Given the small sample size, bootstrapped confidence intervals were generated to stabilize regression estimates.

### ***Reporting***

Results of all regression analyses were reported in accordance with APA guidelines. Standardized beta coefficients, unstandardized coefficients,  $R^2$ , adjusted  $R^2$ , 95% confidence intervals, and p-values were reported for each model. Statistical significance was evaluated at the .05 level. Model fit and effect size were interpreted in relation to theoretical expectations and the study's sample size.

Exploratory findings were clearly labeled as exploratory and interpreted cautiously. If multiplicity adjustments (e.g., Holm correction) are applied within families of tests, adjusted p-values were reported. Descriptive statistics and reliability coefficients were reported prior to inferential analyses to provide contextual understanding of the sample and measurement properties.

### Summary

This chapter outlined the research methods used to examine how students' perceptions of the teacher–student relationship (TSR) predict academic achievement and motivation in higher education. Grounded in a quantitative, non-experimental, correlational, predictive design, the study collected data from students enrolled in Anatomy and Physiology I Lab at a mid-sized public university. A combination of validated survey tools, including the Teacher–Student Relationship Inventory (TSRI), Motivated Strategies for Learning Questionnaire (MSLQ), and Self-Regulation Questionnaire–Academic (SRQ-A) were used to gather perceptions of the TSR from the student perspective.

Data analysis was guided by a series of single regression analyses and Pearson's correlation analyses to assess the strength and predictive value of TSR perceptions on student outcomes. Together, these methods provide a framework for understanding relational dynamics and academic outcomes in the college classroom. The following chapter presents the results of these analyses, offering insight into the relationships uncovered between TSR perceptions and key academic indicators.

## CHAPTER FOUR: RESULTS

The purpose of this study was to examine the extent to which student perceptions of the teacher–student relationship (TSR) predicted academic achievement and multidimensional motivation among undergraduate students in higher education. This chapter presents the results of the statistical analyses conducted to address the research question and test the stated hypotheses.

The chapter is organized into four sections: (a) descriptive statistics of the sample, (b) preliminary analyses and assumption testing, (c) correlation analyses, and (d) regression analyses examining the predictive relationship between student perceptions of TSR and academic outcomes.

### Participant Overview

A total of 21 undergraduate students participated in the study. Demographic data, such as age and gender, were not collected in this study.

### Data Screening

Data were screened for missing values prior to analysis. No missing data were identified across primary or exploratory variables.

### Descriptive Statistics

Descriptive statistics were calculated for all study variables, including teacher–student relationship (TSR) subscales, academic achievement (GPA), and motivation measures (MSLQ and SRQ-A subscales).

**Table 1**

#### *Descriptive Statistics*

Variable	M	SD	Min	Max	Skewness	Kurtosis
TSRI Mean	2.99	0.46	2.23	3.85	-0.40	-0.88

GPA	3.81	0.27	3.00	4.00	-1.62	2.83
Intrinsic Goal Orientation	5.41	0.94	4.00	7.00	0.13	-1.00
Task Value	6.25	0.87	4.00	7.00	-1.12	0.65
Self-Efficacy	5.91	0.79	4.14	7.00	-0.45	-0.49
Test Anxiety	3.39	1.76	1.00	6.75	0.59	-0.80
Control of Learning Beliefs (Single Item)	6.00	1.16	3.00	7.00	-	-
Relative Autonomy Index (RAI)	-0.42	2.00	-3.89	4.33	0.51	0.33
External Regulation	3.14	0.56	2.11	4.00	-0.15	-0.74
Introjected Regulation	3.45	0.44	2.67	4.00	-0.32	-1.24
Identified Regulation	3.60	0.35	2.86	4.00	-0.45	-0.62
Intrinsic Regulation	2.86	0.68	1.86	4.00	0.27	-1.04

Preliminary screening indicated no significant violations of normality. Skewness values ranged from  $-1.62$  to  $0.59$ , and kurtosis values ranged from  $-1.24$  to  $2.83$  across the primary study variables. All values fell within acceptable thresholds ( $\pm 2$  for skewness and  $\pm 3$  for kurtosis), supporting the use of parametric statistical analyses. Given the modest sample size ( $N = 21$ ), bootstrapped confidence intervals were also employed to enhance the stability of regression estimates.

Descriptive statistics for all study variables are presented in Table 1. Overall, students reported generally positive perceptions of the teacher–student relationship, with relatively high satisfaction and low conflict with instructors. Academic performance in the sample was also relatively high, with all students earning GPAs between 3.00 and 4.00.

Regarding motivation, students reported relatively strong levels of intrinsic goal orientation, task value, and academic self-efficacy. Among these variables, task value demonstrated the highest overall mean, suggesting that students generally perceived the course material as important and useful. Test anxiety exhibited greater variability compared to the other motivational constructs.

In terms of self-determined motivation, the Relative Autonomy Index indicated a slightly negative overall motivational orientation, reflecting somewhat stronger controlled than

autonomous motivation within the sample. Examination of the individual regulatory styles suggested moderate levels of external and introjected regulation, slightly higher levels of identified regulation, and comparatively lower levels of intrinsic regulation. The Control of Learning Beliefs was measured with a single item; therefore, skewness and kurtosis statistics were not calculated for this variable.

Following the examination of descriptive statistics, reliability analyses were conducted to assess the internal consistency of the multi-item scales used in the present study.

### **Internal Consistency Reliability**

Prior to conducting correlational and regression analyses, internal consistency reliability was evaluated using Cronbach's alpha for all multi-item scales and subscales to ensure adequate scale performance within the present sample.

**Table 2**

*Internal Consistency Reliability for Study Measures*

<b>Subscale</b>	<b>Number of Items</b>	<b>Cronbach's <math>\alpha</math></b>
Satisfaction	5	.873
Instrumental Help	4	.815
Conflict	5	.512
Intrinsic Goal Orientation	3	.563
Task Value	5	.893
Self-Efficacy for Learning and Performance	9	.917
Test Anxiety	4	.834
External Regulation	8	.442
Introjected Regulation	8	.763
Identified Regulation	8	.783
Intrinsic Regulation	8	.565

### ***TSR***

Cronbach's alpha coefficients were computed to evaluate the internal consistency of the Teacher-Student Relationship Inventory (TSRI) subscales within the present sample. Results

indicated strong internal consistency for the Satisfaction subscale ( $\alpha = .873$ ) and good internal consistency for the Instrumental Help subscale ( $\alpha = .815$ ), both of which fall within commonly accepted reliability thresholds ( $\alpha \geq .70$ ). In contrast, the Conflict subscale demonstrated lower internal consistency ( $\alpha = .512$ ), falling below conventional reliability thresholds. Examination of item-total statistics indicated that one conflict item demonstrated weaker covariance with the overall scale, which may have attenuated the reliability estimate. Overall, the Satisfaction and Instrumental Help subscales demonstrated acceptable-to-strong reliability, whereas the Conflict subscale showed limited internal consistency in this sample.

### ***MSLQ***

Internal consistency reliability was evaluated for each multi-item MSLQ subscale within the present sample. The Intrinsic Goal Orientation subscale demonstrated limited internal consistency ( $\alpha = .563$ ), which falls slightly below conventional reliability thresholds but is not uncommon for scales with a small number of items and small sample sizes. The Task Value subscale demonstrated strong internal consistency ( $\alpha = .893$ ). The Self-Efficacy for Learning and Performance subscale exhibited excellent internal consistency ( $\alpha = .917$ ). The Test Anxiety subscale also demonstrated strong reliability ( $\alpha = .834$ ). Overall, most MSLQ subscales demonstrated good to excellent internal consistency within this sample, except for the Intrinsic Goal Orientation subscale, which showed weaker reliability. The Control Beliefs about learning was a one-item scale; therefore, internal consistency was not measured.

### ***SRQ-A***

Internal consistency reliability was evaluated for each SRQ-A regulatory subscale within the present sample. The Introjected Regulation ( $\alpha = .763$ ) and Identified Regulation ( $\alpha = .783$ ) subscales demonstrated acceptable to good internal consistency, meeting commonly accepted

reliability thresholds. In contrast, the External Regulation ( $\alpha = .442$ ) and Intrinsic Regulation ( $\alpha = .565$ ) subscales demonstrated lower internal consistency and fell below conventional reliability benchmarks. Overall, two SRQ-A subscales demonstrated acceptable reliability, whereas the external and intrinsic regulation subscales showed weaker internal consistency in this sample.

### **Assumption Testing**

Prior to conducting regression analyses, assumptions of normality, linearity, homoscedasticity, and independence of errors were examined. Skewness and kurtosis statistics were inspected for all primary study variables. Skewness values ranged from  $-1.615$  to  $.510$ , and kurtosis values ranged from  $-1.000$  to  $2.828$ , falling within acceptable thresholds for parametric analysis ( $\pm 2$  for skewness and  $\pm 3$  for kurtosis). These findings suggest no substantial deviations from normality at the variable level.

Linearity was assessed through visual inspection of scatterplots between the predictor variable (TSR mean score) and each outcome variable (GPA, Self-Efficacy, Task Value, Intrinsic Goal Orientation, and Relative Autonomy Index). Visual inspection indicated an approximately linear relationship between TSR and each dependent variable, supporting the assumption of linearity.

Independence of errors was evaluated using the Durbin–Watson statistic for each regression model. Values were within the acceptable range of 1.5 to 2.5, indicating that residuals were independent and that the assumption of independence was met.

Homoscedasticity was assessed by examining standardized residual plots for each regression model. Visual inspection of residual scatterplots demonstrated a relatively even distribution of residuals across predicted values, suggesting that the assumption of homoscedasticity was not violated.

Normality of residuals was evaluated through visual inspection of normal probability (Q-Q) plots and histograms of standardized residuals. The residual distributions appeared approximately normally distributed across models. Given the modest sample size ( $N = 21$ ), minor deviations were addressed by using bootstrapped confidence intervals (5,000 resamples), which provide more robust parameter estimates under small-sample conditions.

Multicollinearity was not a concern in the present analyses because each regression model included a single predictor variable (TSR mean score). Therefore, the Variance Inflation Factor (VIF) statistics were not applicable. Collectively, diagnostic analyses indicated that the assumptions of simple linear regression were adequately met, supporting the validity of the regression findings.

### Correlation Analyses Among Primary Variables

Pearson product-moment correlations were conducted to examine the bivariate relationships among teacher-student relationship (TSR) perceptions, academic achievement, and motivational outcomes.

**Table 3**

#### *Correlation Analysis*

Variable	1	2	3	4	5	6
1. TSR	–					
2. GPA	-.18	–				
3. Intrinsic Goal	.06	-.18	–			
4. Task Value	.14	-.09	.63**	–		
5. Self-Efficacy	-.16	.24	.57**	.68***	–	
6. RAI	.38	-.02	.71***	.62**	.50*	–

*Note.*  $N = 21$ . Values represent Pearson correlation coefficients. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Results indicated that TSR was not significantly correlated with GPA,  $r(19) = -.18$ ,  $p = .445$ , intrinsic goal orientation,  $r(19) = .06$ ,  $p = .803$ , task value,  $r(19) = .14$ ,  $p = .559$ , or self-efficacy,  $r(19) = -.16$ ,  $p = .477$ . However, TSR demonstrated a moderate positive association with the Relative Autonomy Index (RAI),  $r(19) = .38$ ,  $p = .086$ , approaching statistical significance.

Consistent with theoretical expectations, significant positive correlations were observed among motivational subscales. Intrinsic goal orientation, task value, self-efficacy, and RAI were moderately to strongly intercorrelated ( $r$ s ranging from .50 to .71,  $p$ s  $< .05$ ), suggesting conceptual overlap among motivational constructs. A full correlation matrix is presented in Table 3. Because correlations do not establish predictive relationships, regression analyses were conducted to test the study's hypotheses.

### Primary Regression Analysis

To test the study hypotheses, a series of simple linear regression analyses were conducted to examine whether student perceptions of the teacher–student relationship significantly predicted academic achievement and motivational outcomes.

#### *TSR and Academic Achievement Model*

To examine whether student perceptions of the teacher–student relationship predicted academic achievement, a simple linear regression was conducted with the overall TSRI mean score as the predictor and course GPA as the outcome variable. Results of the regression analysis are presented in Table 4.

**Table 4**

#### *Regression Analyses Predicting Academic Achievement*

Predictor	B	SE B	$\beta$	t	p	95% CI
Teacher–Student Relationship	-0.105	0.135	-0.176	-0.780	.445	[-0.387, 0.177]

Academic achievement served as the dependent variable in this regression model. The model was not statistically significant,  $F(1, 19) = 0.61, p = .445$ , indicating that perceived teacher–student relationship quality did not significantly predict academic achievement in this sample. The model accounted for a small proportion of variance in GPA ( $R^2 = .031$ , adjusted  $R^2 = -.020$ ). The regression coefficient for the teacher–student relationship was not statistically significant ( $B = -0.105, SE = 0.135, \beta = .176, t = -0.780, p = .445$ ), and the 95% confidence interval included zero  $[-0.387, 0.177]$ , further indicating a non-significant relationship. These findings suggest that students' perceptions of their relationship with the instructor were not a significant predictor of academic achievement, as measured by course GPA within this sample.

#### ***TSR and Motivation Model***

A series of simple linear regression analyses were conducted to examine whether student perceptions of the teacher–student relationship predicted motivational outcomes, including intrinsic goal orientation, task value, self-efficacy, and relative autonomy index (RAI). Results of these regression analyses are presented in Table 5.

#### **TSR Predicting Intrinsic Goal Orientation.**

A simple linear regression was conducted to determine whether TSR predicted intrinsic goal orientation. The overall model was not statistically significant,  $F(1, 19) = 0.06, p = .803$ , accounting for 0.3% of the variance ( $R^2 = .003$ ; adjusted  $R^2 = -.049$ ). TSR was not a significant predictor of intrinsic motivation,  $B = 0.120, SE = 0.476, \beta = .058, t = 0.25, p = .803$ . The 95% bootstrapped confidence interval ranged from  $-0.698$  to  $0.856$ , indicating no reliable predictive relationship.

#### **TSR Predicting Task Value.**

A regression analysis examined whether TSR predicted task value. The model was not statistically significant,  $F(1, 19) = 0.35, p = .559$ , explaining 1.8% of the variance ( $R^2 = .018$ ; adjusted  $R^2 = -.033$ ). TSR was not a significant predictor of task value,  $B = 0.259, SE = 0.436, \beta = .135, t = 0.59, p = .559$ . The 95% BCa bootstrapped confidence interval ranged from  $-0.854$  to  $1.277$ , crossing zero and indicating non-significance.

#### **TSR Predicting Self-Efficacy.**

A simple linear regression was conducted to examine whether student perceptions of the teacher–student relationship (TSR) predicted self-efficacy. The overall model was not statistically significant,  $F(1, 19) = 0.18, p = .678$ , explaining 0.9% of the variance in self-efficacy ( $R^2 = .009$ ; adjusted  $R^2 = -.043$ ). TSR was not a significant predictor of self-efficacy,  $B = 0.167, SE = 0.396, \beta = .094, t = 0.42, p = .678$ . The 95% BCa bootstrapped confidence interval ranged from  $-0.662$  to  $0.996$ , crossing zero and indicating no reliable predictive relationship.

#### **TSR Predicting RAI.**

A simple linear regression was conducted to examine whether TSR predicted self-determined motivation as measured by the Relative Autonomy Index (RAI). The model approached statistical significance but did not meet the conventional alpha threshold,  $F(1, 19) = 3.27, p = .086$ , accounting for 14.7% of the variance in RAI ( $R^2 = .147$ ; adjusted  $R^2 = .102$ ). TSR demonstrated a moderate positive association with RAI,  $B = 1.688, SE = 0.934, \beta = .383, t = 1.81, p = .086$ . The 95% BCa bootstrapped confidence interval ranged from  $-0.359$  to  $3.339$ . Although the interval crossed zero, the magnitude of the standardized coefficient suggests a potentially meaningful relationship that may warrant further investigation with a larger sample.

**Table 5***Regression Analyses Predicting Motivational Outcomes*

<b>Outcome Variable</b>	<b>B</b>	<b>SE B</b>	<b><math>\beta</math></b>	<b>t</b>	<b>p</b>	<b>95% CI</b>
Intrinsic Goal Orientation	0.120	0.476	0.058	0.253	.803	[-0.876, 1.117]
Task Value	0.259	0.436	0.135	0.594	.559	[-0.653, 1.171]
Self-Efficacy	0.167	0.396	0.094	0.421	.678	[-0.662, 0.996]
Relative Autonomy Index	1.688	0.934	0.383	1.808	.086	[-0.266, 3.642]

### Exploratory Analyses

In addition to the primary regression analyses testing the study hypotheses, exploratory analyses examined whether student perceptions of the teacher–student relationship were associated with additional motivational constructs. These analyses explored relationships between teacher–student relationship quality and supplementary motivation variables, including test anxiety from the MSLQ and the four regulatory styles measured by the SRQ-A (external regulation, introjected regulation, identified regulation, and intrinsic regulation). These analyses were conducted to provide additional insight into potential motivational mechanisms associated with teacher–student relationships and were not included as primary hypothesis tests. These findings suggest that positive teacher–student relationships may be associated with reductions in more controlled forms of motivation, though these analyses were exploratory and should be interpreted cautiously. Results of these exploratory regression analyses are presented in Table 6.

**Table 6***Exploratory Regression Analyses*

<b>Outcome Variable</b>	<b>B</b>	<b>SE B</b>	<b><math>\beta</math></b>	<b>t</b>	<b>p</b>	<b>95% CI</b>
Test Anxiety	-0.977	0.850	-0.255	-1.149	.265	[-2.756, 0.802]
External Regulation	-0.844	0.205	-0.688	-4.128	<.001	[-1.273, -0.416]
Introjected Regulation	-0.552	0.183	-0.569	-3.016	.007	[-0.936, -0.169]
Identified Regulation	-0.083	0.175	-0.109	-0.477	.639	[-0.449, 0.283]
Intrinsic Regulation	-0.235	0.341	-0.156	-0.689	.499	[-0.948, 0.478]

*Note.* These analyses are exploratory and should be interpreted with caution.

Results of the exploratory regression analyses indicated that teacher–student relationship quality did not significantly predict test anxiety, identified regulation, or intrinsic regulation. However, teacher–student relationship quality significantly predicted both external regulation ( $\beta = -.688, p < .001$ ) and introjected regulation ( $\beta = -.569, p = .007$ ). Specifically, higher perceived teacher–student relationship quality was associated with lower levels of externally regulated and introjected forms of motivation. Because these analyses were exploratory and supplementary in nature, rather than part of the primary hypothesis testing, these findings should be interpreted cautiously and are intended to provide supplementary insight into potential motivational dynamics associated with teacher–student relationships (Cohen et al., 2003).

#### Summary

This chapter presented descriptive statistics, reliability analyses, correlation analyses, and regression results examining whether student perceptions of TSR predicted GPA and motivational outcomes. The purpose of this study was to examine the extent to which student perceptions of the teacher–student relationship (TSR) predicted academic achievement and motivation among undergraduate students in higher education. Research Question 1 examined whether student perceptions of TSR predicted academic achievement, as measured by course GPA. The null hypothesis (H0a) stated that student perceptions of the teacher–student relationship would not significantly predict student academic achievement, while the alternative hypothesis (H1a) proposed that student perceptions of TSR would significantly predict GPA. Results of the regression analysis indicated that TSR did not significantly predict academic achievement, and therefore, the null hypothesis was retained.

Research Question 2 examined whether student perceptions of TSR predicted student motivation as measured by the MSLQ subscales (intrinsic goal orientation, task value, and self-

efficacy) and the Relative Autonomy Index (RAI). The null hypothesis (H0b) stated that student perceptions of the teacher–student relationship would not significantly predict student motivation, whereas the alternative hypothesis (H1b) proposed that student perceptions of TSR would significantly predict motivational outcomes. Regression analyses indicated that TSR did not significantly predict any of the primary motivational variables. Therefore, the null hypothesis was retained for Research Question 2.

In addition to the primary analyses, exploratory regression analyses were conducted to examine potential relationships between TSR and additional motivational constructs. However, because these analyses were exploratory and not part of the original hypothesis testing, the findings should be interpreted cautiously and viewed as preliminary. These findings are interpreted in Chapter Five.

## CHAPTER FIVE: DISCUSSION

The purpose of this study was to examine the extent to which student perceptions of the teacher–student relationship (TSR) predicted academic achievement and motivation among undergraduate students in a higher education context. In this study, student perceptions of the teacher–student relationship served as the independent variable and were measured using the Teacher–Student Relationship Inventory (TSRI). Academic achievement, operationalized as course GPA, served as one dependent variable. Student motivation served as an additional dependent variable and was measured using selected motivational subscales from the Motivated Strategies for Learning Questionnaire (MSLQ), as well as the Relative Autonomy Index (RAI) derived from the Self-Regulation Questionnaire–Academic (SRQ-A).

The population of interest for this study consisted of undergraduate students enrolled in an Anatomy and Physiology I laboratory course at a mid-sized public university in the United States. A total of 21 undergraduate students participated in the study.

This chapter interprets the findings of the present study in relation to prior literature and the theoretical frameworks guiding the research. The chapter begins with a summary of the major findings, followed by an interpretation of the results for each research question. Implications for higher education practice and faculty development are then discussed. Finally, limitations of the study and directions for future research are presented before concluding the chapter.

## Summary of Findings

Research Question 1 examined whether student perceptions of the teacher–student relationship predicted academic achievement, as measured by course grade point average (GPA).

Results of the regression analysis indicated that students' perceptions of their relationship with the instructor did not significantly predict course GPA in this sample.

Academic performance in the sample was relatively high, with GPAs ranging from 3.00 to 4.00 and a mean GPA of 3.81.

Research Question 2 examined whether student perceptions of the teacher–student relationship predicted student motivation as measured by the MSLQ motivational subscales (intrinsic goal orientation, task value, and self-efficacy) and the Relative Autonomy Index (RAI). Regression analyses indicated that TSR did not significantly predict intrinsic goal orientation, task value, or self-efficacy as measured by the MSLQ. Similarly, TSR did not significantly predict the Relative Autonomy Index derived from the SRQ-A; however, results indicated a moderate effect size and a relationship approaching statistical significance.

In addition to the primary analyses, exploratory regression analyses were conducted to examine potential relationships between TSR and additional motivational constructs. These exploratory findings indicated that TSR significantly predicted both external regulation and introjected regulation. Specifically, higher levels of perceived TSR were associated with lower levels of external regulation and introjected regulation.

Overall, the primary analyses indicated that student perceptions of the teacher–student relationship did not significantly predict academic achievement or the primary motivational constructs measured. However, the exploratory analyses revealed statistically significant relationships between TSR and certain forms of controlled motivation, indicating that stronger perceived teacher–student relationships were associated with lower levels of externally driven motivational regulation. These findings are exploratory in nature and were not part of the original hypothesis testing.

### **Interpretation of Findings**

The purpose of this study was to examine the extent to which student perceptions of the teacher–student relationship (TSR) predicted academic achievement and motivation among undergraduate students in higher education. The findings of this study revealed that TSR was not a statistically significant predictor of academic achievement or the primary motivational constructs measured. However, exploratory analyses indicated that TSR significantly predicted two forms of controlled motivation, external regulation and introjected regulation. The following section interprets these findings in relation to the theoretical frameworks and prior literature presented.

#### ***Research Question 1: Teacher–Student Relationship Predicting Academic Achievement***

The first hypothesis proposed that student perceptions of the teacher–student relationship would significantly predict academic achievement, as measured by students’ course GPA. The results indicated that TSR was not a statistically significant predictor of academic achievement within this sample. Although the direction of the relationship was positive, the effect was not statistically significant. These findings differ somewhat from prior research that has identified positive relationships between teacher–student relationships and academic achievement.

Several studies have reported that positive faculty–student interactions and perceived instructor support are associated with higher academic performance and GPA (Gunuc & Kuzu, 2014; Komarraju et al., 2010; Micari & Pazos, 2012; Ullah & Wilson, 2007). Additionally, meta-analytic findings have suggested that positive teacher–student relationships are associated with improvements in academic outcomes, although effect sizes are often small to moderate (Goktas & Kaya, 2023; Roorda et al., 2011). For example, Roorda et al. (2011) found that affective qualities of teacher–student relationships were positively associated with student academic

performance, though the strength of this relationship was smaller than the association between teacher–student relationships and student engagement.

Although the present study did not identify a statistically significant predictive relationship between TSR and academic achievement, several contextual factors may help explain this result. One potential explanation is the relatively high level of academic performance within the sample. Students reported GPAs ranging from 3.00 to 4.00, with a mean GPA of 3.81. This restricted range in GPA may have created a ceiling effect, limiting variability in the outcome variable and reducing the statistical power to detect meaningful relationships. When outcome variables exhibit limited variability, the ability of regression models to detect significant predictors is reduced.

Another factor that may have contributed to the non-significant findings is the homogeneity of the sample. Participants were drawn from a single course within one academic college at a single institution, resulting in a relatively similar group of students with comparable academic backgrounds and experiences. Prior research suggests that variation in student populations and institutional contexts can influence the strength of relationships between teacher–student interactions and academic outcomes (Komarraju et al., 2010; Pascarella & Terenzini, 2005). As a result, the limited variability within the present sample may have reduced the observable impact of TSR and academic achievement.

Although the present study did not find statistically significant relationships between teacher–student relationship (TSR) quality and GPA, the findings remain consistent with prior literature suggesting that TSRs may shape students’ academic experiences even when improvements in grades are not directly observed. For example, Iqbal (2022) found that students’ positive perceptions of teacher–student relationships were significantly associated with their

perceived learning outcomes, even though these relationships were not significantly correlated with marks overall. Similarly, Cornelius-White (2007) reported that positive teacher–student relationships were substantially associated with affective and behavioral outcomes such as participation, satisfaction, and motivation, indicating that relational quality may be especially important for how students experience learning rather than for grades alone. Roorda et al. (2011) likewise found that affective teacher–student relationships were more strongly associated with student engagement than with academic achievement, suggesting that TSRs may exert their strongest influence through students’ engagement, motivation, and overall connection to the learning process rather than through direct gains in performance.

Despite the lack of a statistically significant predictive relationship, the findings suggest that the relationship between TSR and academic achievement is more complex and may operate indirectly through other mechanisms, such as engagement, motivation, or sense of belonging. Previous research has suggested that student engagement often mediates the relationship between teacher–student relationships and academic performance (Connell & Wellborn, 1991; Furrer & Skinner, 2003; Roorda et al., 2011). Therefore, it is possible that TSR influences academic achievement through intermediate psychological processes rather than exerting a direct predictive effect on GPA.

### ***Research Question 2: Teacher–Student Relationship Predicting Student Motivation***

Research Question 2 examined whether student perceptions of the teacher–student relationship predicted student motivation as measured by the MSLQ motivational subscales and the Relative Autonomy Index (RAI). The results indicated that TSR did not significantly predict intrinsic goal orientation, task value, or self-efficacy. Similarly, TSR did not significantly predict

the Relative Autonomy Index, although the relationship approached statistical significance and demonstrated a moderate effect size.

Although these findings were not statistically significant, the trend-level relationship between TSR and the Relative Autonomy Index may still provide meaningful insight. The Relative Autonomy Index reflects the overall balance between autonomous and controlled forms of motivation. The moderate association between TSR and RAI may indicate that stronger teacher–student relationships are associated with greater autonomous motivation among students, even though the relationship did not reach conventional levels of statistical significance in this sample. Given the relatively small sample size, a moderate effect size may indicate that a larger or more diverse sample could reveal a clearer relationship.

These findings can be interpreted through the lens of Self-Determination Theory (SDT). SDT proposes that individuals experience higher levels of intrinsic motivation when their basic psychological needs for autonomy, competence, and relatedness are supported (Ryan & Deci, 2000a; Niemiec & Ryan, 2009). Within educational settings, supportive teacher–student relationships are believed to contribute to students’ need for relatedness, which can in turn enhance students’ internal motivation to engage in learning activities. Previous research has shown that students who perceive their instructors as supportive, caring, and approachable often demonstrate higher levels of intrinsic motivation and engagement (Frymier, 2007; Frisby & Myers, 2008; Kim & Lundberg, 2016). While the present study did not identify statistically significant predictive relationships between TSR and the primary motivational constructs, the observed trend toward greater autonomous motivation remains theoretically consistent with SDT.

### *Interpretation of Exploratory Motivational Findings*

The most notable statistical findings in this study emerged from the exploratory analyses examining relationships between TSR and additional motivational constructs. These analyses revealed that TSR significantly predicted both external regulation and introjected regulation. Specifically, stronger perceived teacher–student relationships were associated with lower levels of these controlled forms of motivation.

These findings are highly consistent with the principles of Self-Determination Theory. SDT distinguishes between autonomous motivation, which reflects internally driven engagement with learning, and controlled motivation, which reflects behavior driven by external pressures or internal feelings of obligation (Ryan & Deci, 2000a). External regulation refers to behavior motivated by rewards, punishments, or external expectations, while introjected regulation refers to behavior driven by internal pressures such as guilt or obligation. According to SDT, supportive interpersonal environments can reduce reliance on these controlled forms of motivation while encouraging more autonomous engagement with learning. When students perceive their instructors as supportive and caring, they may feel less pressure to engage in academic tasks solely due to external expectations or internalized obligations. Instead, supportive relationships may create learning environments that foster psychological safety, trust, and a sense of belonging.

Attachment Theory provides an additional lens for interpreting the present findings. In educational contexts, teachers can serve as secondary attachment figures, providing emotional support, security, and encouragement. When students perceive their instructors as approachable, empathetic, and supportive, they may feel greater emotional safety in the classroom. This relational security can encourage students to take intellectual risks, ask questions, and engage

more deeply with academic material (Hamre & Pianta, 2001; Hagenauer & Volet, 2014). In the present study, stronger perceived TSRs may have contributed to reductions in externally driven forms of motivation by fostering a classroom climate characterized by trust and relational support.

These findings are also consistent with prior research emphasizing the importance of interpersonal relationships in educational contexts. Studies examining faculty–student interactions have found that supportive relationships with instructors are associated with greater student engagement, satisfaction with learning, and overall well-being (Frisby, 2009; Gunuc & Kuzu, 2014; Kim & Lundberg, 2016). Similarly, research grounded in Attachment Theory suggests that supportive teacher–student relationships can serve as a form of relational security, promoting exploration, engagement, and academic persistence (Bowlby, 1969; Hamre & Pianta, 2001; Verschueren & Koomen, 2012).

Overall, the interpretation of these exploratory findings suggests that teacher–student relationships may influence motivational processes in subtle but meaningful ways. While TSR did not significantly predict academic achievement or the primary motivational constructs measured in this study, the significant relationships observed with controlled forms of motivation indicate that supportive instructor–student relationships may help reduce externally driven motivational pressures. These results highlight the potential importance of interpersonal relationships within higher education classrooms and support the broader body of literature emphasizing the role of relational dynamics in shaping student motivation and engagement.

### **Implications**

The findings of this study have several implications for faculty development and institutional strategies aimed at supporting student motivation and engagement in higher

education. Although the primary analyses did not reveal statistically significant relationships between student perceptions of the teacher–student relationship (TSR) and academic achievement or the primary motivational constructs measured, the exploratory findings indicated that stronger teacher–student relationships were associated with lower levels of controlled motivation. These results suggest that relational dynamics between instructors and students may play an important role in shaping students’ motivational experiences in the classroom. As such, the findings highlight several areas in which institutions and educators may consider strengthening relational practices in higher education.

### ***Faculty Professional Development***

One important implication of this study relates to the need for greater emphasis on relational teaching practices within faculty professional development. In higher education, faculty are often trained primarily in disciplinary expertise and research productivity, with relatively little formal preparation in relationship-building or relational pedagogy (Arum & Roksa, 2011; Chory & Offstein, 2017). However, research consistently demonstrates that supportive and empathetic interactions between instructors and students contribute to stronger engagement, motivation, and overall learning experiences (Jennings & Greenberg, 2009; Frymier & Houser, 2000).

Professional development programs focused on relational teaching practices may help instructors develop strategies to build positive classroom relationships. These programs may include training in effective communication, student-centered teaching approaches, strategies for demonstrating empathy, responsiveness, approachability, and student-centered communication (Meyers et al., 2019; Niemiec & Ryan, 2009; Ryan & Deci, 2000a; Skinner & Belmont, 1993). Faculty development initiatives that emphasize relational awareness may therefore help

instructors create classroom climates that support both academic engagement and motivational development among students (Jennings & Greenberg, 2009; Rimm-Kaufman & Hamre, 2010).

### ***Student Relationship Building***

The findings also highlight the importance of intentional relationship-building between instructors and students. Previous research has shown that students who perceive their instructors as approachable and supportive are more likely to participate in class discussions, seek help when needed, and remain engaged in learning activities (Frisby & Myers, 2008; Komarraju et al., 2010; Micari & Pazos, 2012). Even small relational behaviors, such as learning students' names, demonstrating genuine interest in their academic progress, and providing supportive feedback, can contribute to the development of stronger teacher–student relationships (Frymier & Houser, 2000; Meyers et al., 2019; Quinlan, 2016).

Within higher education settings, where class sizes and institutional structures may limit opportunities for individual interaction, instructors may need to intentionally create opportunities for connection with students. Strategies such as structured classroom discussions, collaborative learning activities, and regular opportunities for feedback may help foster a classroom climate in which students feel more comfortable engaging with their instructors and peers (Gillies, 2004; Ruzek et al., 2016).

### ***Mentorship***

Another implication of this study involves the role of mentorship in supporting student development and motivation. Faculty members often serve as important mentors for undergraduate students, providing guidance not only related to coursework but also regarding academic pathways, career development, and professional identity formation. Positive mentoring relationships can foster a stronger sense of belonging and support students' persistence within

their academic programs (Kim & Lundberg, 2016; Pascarella & Terenzini, 2005). Research has shown that faculty–student mentoring relationships can increase students’ confidence, academic motivation, and commitment to educational goals (Camp, 2011; Komarraju et al., 2010).

Institutions may consider expanding formal and informal mentorship opportunities that encourage meaningful faculty–student interactions outside of the traditional classroom setting. Structured mentorship programs, faculty advising relationships, and research collaboration opportunities can provide additional contexts in which supportive teacher–student relationships can develop (Kim & Lundberg, 2016; Palmer et al., 2009; McGivney, 1996; Pascarella, 2006; Pascarella & Terenzini, 2005). These mentoring relationships may help students feel more connected to faculty members and to the broader academic community, which can enhance students’ sense of belonging and engagement in their academic programs (Freeman et al., 2007; Tinto, 1993).

### ***Faculty Accessibility***

The accessibility of faculty members represents another important implication of the present findings. Office hours and other opportunities for informal interaction can provide students with valuable opportunities to ask questions, seek academic support, and develop stronger relationships with their instructors. However, prior research suggests that many students underutilize office hours due to feelings of intimidation, uncertainty about expectations, or perceptions that faculty members are not readily available (Micari & Pazos, 2012; Smith et al., 2017).

Encouraging faculty to create more accessible and welcoming opportunities for interaction may help address these barriers. Relationship-building practices, such as embedding regular check-ins and open-door policies into course design, can help faculty become more

accessible and supportive (Frymier & Houser, 2000; Schuck et al., 2021). Strategies such as flexible office-hour formats, virtual meeting options, and proactive invitations for students to seek support may also increase the likelihood that students engage with faculty outside the classroom (Hagenauer & Volet, 2014; Komarraju et al., 2010). These interactions can strengthen teacher–student relationships and contribute to a more supportive academic environment (Frisby & Myers, 2008; Kim & Lundberg, 2016).

Taken together, these implications suggest that strengthening teacher–student relational dynamics may contribute to more supportive learning environments and improved student experiences. While the direct predictive relationship between TSR and academic achievement was not statistically significant in the present study, the findings highlight the potential influence of relational dynamics on students’ motivational experiences. Institutions and faculty members who prioritize relational engagement, mentorship, and accessibility may help foster learning environments that support student motivation, engagement, and overall academic development (Komarraju et al., 2010; Roorda et al., 2011; Tinto, 1993).

### **Limitations**

Several limitations should be considered when interpreting the findings of this study. These limitations relate to the sample characteristics, measurement methods, and research design, all of which may influence the generalizability and interpretation of the results.

One limitation of the present study is the relatively small sample size. The study included 21 undergraduate students, which may have limited the statistical power to detect significant relationships between the variables of interest. Smaller sample sizes reduce the ability of statistical analyses to identify subtle or moderate relationships, particularly when multiple regression analyses are conducted. As a result, it is possible that meaningful relationships

between teacher–student relationships and student outcomes may not have reached statistical significance within this sample.

Another limitation refers to the homogeneity of the sample. Participants were drawn from a single course at one public university and were enrolled in the same academic college. Because the students shared similar academic experiences and educational contexts, there was relatively little variability in the sample. This lack of diversity in institutional context, course structure, and student background may limit the generalizability of the findings to other disciplines, institutions, or student populations.

Perhaps the most significant limitation concerns the restricted range of academic achievement within the sample. Students reported GPAs ranging from 3.00 to 4.00, with a mean GPA of 3.81. This relatively high level of academic performance suggests the possibility of a ceiling effect. When outcome variables have limited variability, it becomes more difficult for statistical analyses to detect meaningful relationships between predictors and outcomes. The restricted range of GPA values may therefore have reduced the likelihood of identifying a statistically significant relationship between teacher–student relationships and academic achievement.

Another limitation concerns reliance on student self-report data. Measures of teacher–student relationships and motivation were collected through self-report survey instruments, which may introduce response bias or social desirability effects. In addition, students self-reported their course GPA following completion of the course. Although students were instructed to report their final grades after the course ended, some may have reported their expected grade rather than their final posted grade if official grades had not yet been released at the time of the survey. As a result, minor inaccuracies in self-reported GPA may have occurred.

This study is also limited by its examination of teacher–student relationships solely from the student perspective. While student perceptions are an important component of the teacher–student relationship, they do not fully capture the complexity of TSRs. Teacher–student relationships are often co-constructed through the mutual perceptions, expectations, and behaviors of both instructors and students. Because the present study did not include faculty perspectives or observational measures of classroom interactions, it provides only a partial view of the relational dynamics that may influence student motivation and academic outcomes.

Despite these limitations, the study contributes to the growing body of research examining teacher–student relationships in higher education. The findings provide insight into how students perceive their relationships with instructors and highlight potential connections between relational dynamics and motivational processes within the college classroom.

### **Directions for Future Research**

Although this study provides insight into how students' perceptions of TSR relate to motivation and academic outcomes, additional research is needed to better understand the complexity of these relationships and the mechanisms through which they influence students' learning experiences.

One important direction for future research is to include both student and faculty perspectives when examining teacher–student relationships. The present study focused exclusively on student perceptions of TSR; however, relationships between instructors and students are inherently reciprocal and are shaped by the expectations, behaviors, and perceptions of both parties. Future studies may benefit from incorporating faculty reports of teacher–student relationships or using dyadic research designs that capture both student and instructor perspectives. Such approaches could provide a more comprehensive understanding of how TSRs

are developed and maintained within higher education contexts (Hagenauer & Volet, 2014; Brinkworth et al., 2017).

Future research should also consider examining teacher–student relationships across more diverse institutional and academic contexts. The present study was conducted within a single course at one institution, which may limit the generalizability of the findings. Studies that include students from multiple universities, disciplines, and course formats may help determine whether the relationships observed in this study are consistent across different educational environments. Prior research has suggested that the strength and nature of teacher–student relationships may vary depending on factors such as class size, instructional format, and institutional culture (Pascarella & Terenzini, 2005; Kuh et al., 1991). Expanding research across varied contexts may therefore provide a clearer understanding of how TSRs function across higher education settings.

Another direction for future research involves the use of longitudinal research designs. Teacher–student relationships often develop gradually over the course of a semester or academic program. Because the present study used a cross-sectional design, it was not possible to examine how these relationships evolve over time or how they influence changes in motivation and academic engagement. Longitudinal studies that track the development of teacher–student relationships throughout a course or academic program may provide deeper insight into the dynamic nature of these relationships and their long-term impact on student outcomes (Hagenauer & Volet, 2014; Roorda et al., 2011).

Additionally, future research could incorporate qualitative observational or behavioral measures of teacher–student interactions to complement self-report data. Observational methods may provide a richer understanding of the specific instructor behaviors and classroom dynamics

that contribute to the development of positive teacher–student relationships. For example, researchers may examine instructional practices such as feedback strategies, communication styles, and opportunities for student participation in order to better understand how relational environments are created in higher education classrooms (Hamre & Pianta, 2001; Ruzek et al., 2016).

Finally, future research may explore potential mediating or moderating variables that influence the relationship between teacher–student relationships and student outcomes. Factors such as student engagement, sense of belonging, academic self-efficacy, or classroom climate may play an important role in shaping how TSRs influence motivation and achievement (Connell & Wellborn, 1991; Furrer & Skinner, 2003; Freeman et al., 2007). Investigating these mechanisms may help clarify the pathways through which relational dynamics between instructors and students influence student success in higher education.

Overall, continued research on teacher–student relationships in higher education is needed to better understand how these relational interactions contribute to student motivation and academic success. Expanding research designs to include multiple perspectives, diverse institutional contexts, longitudinal approaches, and additional motivational constructs may help deepen our understanding of the role that TSRs play in shaping the undergraduate learning experience.

### **Conclusion**

This study examined the extent to which student perceptions of the teacher–student relationship (TSR) predicted academic achievement and motivation among undergraduate students in higher education. Although TSR did not significantly predict academic achievement or the primary motivational constructs measured in this study, the findings provide meaningful

insight into the role that relational dynamics may play in students' academic experiences. Exploratory analyses revealed that stronger perceived teacher–student relationships were associated with lower levels of externally driven forms of motivation, suggesting that relational interactions between instructors and students may influence how students experience and engage with their academic environment. These findings align with prior research suggesting that teacher–student relationships may exert their strongest influence on students' engagement, motivation, and overall learning experiences rather than directly affecting academic performance (Cornelius-White, 2007; Roorda et al., 2011).

Taken together, the results of this study reinforce the importance of interpersonal relationships within higher education settings. Supportive teacher–student relationships may help foster classroom environments that promote psychological safety, engagement, and motivation among students, even when direct improvements in academic performance are not observed (Frisby, 2009; Hagenauer & Volet, 2014).

Overall, this study contributes to the growing literature on teacher–student relationships in higher education by providing empirical evidence from the student perspective and highlighting the potential influence of relational dynamics on motivational processes. As institutions continue to prioritize student engagement and success, understanding the relational dimensions of teaching and learning remains an important area of inquiry. Continued research examining the role of teacher–student relationships in higher education may further clarify how relational interactions between instructors and students contribute to meaningful learning experiences and long-term academic development.

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## APPENDICES

**APPENDIX A: STUDENT INSTRUCTIONS PRESENTED DURING SURVEY**

Thank you for taking part in this research study, which seeks to better understand student perceptions of teacher–student relationships in college classrooms. The survey contains a series of statements about your experience with your current instructor. Please answer each item honestly based on your own perception of your relationship with this specific faculty member. This is not an evaluation of the instructor’s teaching ability, but rather a reflection of how you view your academic and interpersonal connection with them. You will also be asked to anonymously report your expected or received grade in the course. Your responses are completely confidential, will not be shared with your instructor, and will have no effect on your grade or standing in the course. The survey will take approximately 10-20 minutes to complete. Use the associated scale provided to respond to each item.



## APPENDIX B: STUDENT INFORMED CONSENT FORM

## CONSENT TO PARTICIPATE IN RESEARCH

*Examining the Relationship Between Student Perceptions of Teacher–Student Relationships and Academic Outcomes*

Caroline David- Doctoral Candidate- [cxd1051@sru.edu](mailto:cxd1051@sru.edu)  
Mark Hogue-Principal Investigator- [mark.hogue@sru.edu](mailto:mark.hogue@sru.edu)

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**Invitation to be Part of a Research Study**

You are invited to participate in a research study. In order to participate, you must be a student enrolled at East Stroudsburg University in a Health Science Professions Major, enrolled in Anatomy and Physiology I Laboratory. You do not have to participate, and you can stop at any time. Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

**Important Information about the Research Study**

Things you should know:

- The purpose of this study is to explore how teacher–student relationships (TSRs) form and examine how students’ perceptions of these relationships impact student achievement, engagement, and motivation in higher education.
- If you choose to participate, you will be asked to complete an online experience survey. This will take approximately 10-20 minutes.
- When completing the study, you will also be asked to share your GPA score for the course. This information will remain completely anonymous and not associated with any identifying information.
- Risks or discomforts from this research include:
  - Anonymity- faculty will not have access to the student’s results of the survey or any responses. Student Name will not be collected in any way.
  - Concerns About Impact on Grades- Faculty will not have access to the student’s results of the survey or any responses and therefore cannot impact student academic grades.
- The study will not provide you with any direct benefits.

**What is the Study About and Why are We Doing it?**

The purpose of the study is to explore how teacher–student relationships (TSRs) form and evolve across different educational settings and examine how and students’ perceptions of these relationships impact student achievement, engagement, and motivation in higher education.

**What Will Happen if You Take Part in This Study?****Participation Requirements and Instructions**

**Step 1-** Open the SurveyMonkey Link [Insert Link].

**Step 2-** Read the consent statement in full. Then, check the checkbox agreeing to participation.

**Step 3-** Read the instructions for completing the survey presented at the top.

**Step 4-** Based off your relationship with the instructor of your course, please indicate your level of agreeance with each of the following statements. Click submit to finish the survey.

### **Important Notes:**

Participation is voluntary. There is no penalty for choosing not to participate. Your survey responses will be completely anonymous and will not be shared with your course instructor.

Your GPA score will remain anonymous to the researchers and will only be used to draw conclusions about the teacher–student relationship and GPA score. Participation in the study will not affect your GPA score or academic standing. Participating or not participating will not affect your grade or standing in the course. **The survey will remain open for 11 days.** You'll receive a reminder email before it closes. Thank you for considering participating. Your input is valuable and can help improve our understanding of student success in higher education.

### **How Could You Benefit from This Study?**

Although you will not directly benefit from being in this study, it will inform faculty of factors that enhance the TSR, which could lead to stronger academic support in the future.

### **What Risks Might Result from Being in This Study?**

We do not believe there are any significant risks from participating in this research. However, some indirect risks are:

- Emotional and Psychological Risks or discomforts from this research include:
  - Anonymity- Student data and GPA will remain anonymous to the researchers.
  - Concerns About Impact on Grades- Faculty will not have access to the student's results of the survey or any responses and therefore cannot impact student academic grades.
- Anonymity- Student responses will be kept safe via SurveyMonkey and will not be shared with faculty.

### **How Will We Protect Your Information?**

We plan to publish the results of this study. To protect your privacy, we will not include information that could directly identify you. We will protect your research records by not collecting any identifiable information (NAME).

### **What Will Happen to the Information We Collect About You After the Study is Over?**

Your information will be deleted from the research data as part of the project.

### **What Other Choices do I Have if I Don't Take Part in this Study?**

If you choose not to participate, there are no alternatives.

### **Your Participation in this Research is Voluntary**

It is totally up to you to decide to be in this research study. Participating in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer. If you decide to

withdraw before this study is completed, data will be deleted [please contact Caroline David at [cxd1051@sru.edu](mailto:cxd1051@sru.edu)].

### **Contact Information for the Study Team and Questions about the Research**

If you have questions about this research, you may contact Dr. Mark Hogue at [mark.hogue@sru.edu](mailto:mark.hogue@sru.edu) or Caroline David at [cxd1051@sru.edu](mailto:cxd1051@sru.edu).

### **Contact Information for Questions about Your Rights as a Research Participant**

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the following:

Institutional Review Board  
Slippery Rock University  
104 Maltby, Suite 302  
Slippery Rock, PA 16057  
Phone: (724)738-4846  
Email: [irb@sru.edu](mailto:irb@sru.edu)

### **Your Consent**

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. I/We will give you a copy of this document for your records. I/We will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above. Taking part in this research project is voluntary. You do not have to participate, and you can stop at any time.

**I consent to participation in the study.**

**I consent to sharing my anonymous GPA (or expected GPA) from this course.**

*I understand what the study is about and my questions so far have been answered. I agree to take part in this study. I understand that I can withdraw at any time. A copy of this signed Consent Form has been given to me.*

\_\_\_\_\_  
Printed Participant Name

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

By signing below, I indicate that the participant has read and to the best of my knowledge understands the details contained in this document and have been given a copy.

\_\_\_\_\_  
Printed Name of Investigator

\_\_\_\_\_  
Signature of Investigator

\_\_\_\_\_  
Date

## APPENDIX C: STUDENT RECRUITMENT PROCEDURE

**IN PERSON STATEMENT TO STUDENTS BY THE CO-PRINCIPAL INVESTIGATOR  
(SCRIPT)**

Hello Students, I want to let you know about a voluntary research study being conducted here at ESU by myself and other researchers. The study is looking at how the relationship between students and instructors might be connected to student success, motivation, and engagement in college.

If you choose to participate, you'll complete a short, anonymous online survey that takes about 10-20 minutes. It asks about your experience in this course and your perception of your relationship with your instructor. This is not an evaluation of teaching quality, just your honest perspective on how you interact in class. Your participation in this study is completely anonymous and your responses to the survey will not be shared with your instructor. This survey and your responses will not have any effect on your final grade for the course or academic standing.

You'll also be asked to share your final GPA in this course, anonymously, with the research team. Your name will not be collected or shared, and your responses will remain completely confidential. Participation won't affect your grade in any way, and your responses will not be shared with me.

Please look out for an email from Caroline David that will contain more information about the study and its procedures. Please thoroughly read the consent statement, and if you agree to participation, you will move forward to complete the survey.

Again, your participation is completely voluntary. If you have any questions, you're welcome to reach out to the researcher directly. Thank you for considering it!

**OFFICIAL STUDENT EMAIL INVITATION WITH INSTRUCTIONS**

Subject: Invitation to Participate-Voluntary Research Study on Student-Instructor Relationships

Dear [Student First Name],

You are officially invited to participate in a voluntary research study exploring how student-instructor relationships affect academic achievement, engagement, and motivation in college. This study is being conducted by Caroline David and includes students currently enrolled in Anatomy and Physiology I Lab for the Health Sciences.

If you choose to participate, you'll complete a short, anonymous online survey that takes about 10-20 minutes. It asks about your experience in this course and your perception of your relationship with your instructor. This is not an evaluation of teaching quality, just your honest perspective on how you interact in class.

You'll also be asked to share your final GPA in this course, anonymously, with the research team. Your name will never be collected or shared, and your responses will remain completely confidential. Participation won't affect your grade in any way, and your responses will not be shared with me or your instructor.

If you agree to participation in this study, please use the [following link](#) to the survey.

**Participation Requirements and Instructions**

**Step 1-** Open the SurveyMonkey [Link](#)

**Step 2-** Read the consent statement in full. Then, check the checkbox agreeing to participation.

**Step 3-** Read the instructions for completing the survey presented at the top.

**Step 4-** Based off your relationship with the instructor of your course, please indicate your level of agreeance with each of the following statements. Click submit to finish the survey.

Important Notes:

Participation is voluntary. There is no penalty for choosing not to participate. Your survey responses and GPA will be completely anonymous and confidential and will not be shared with your course instructor. Participation in the study will not affect your GPA score or academic standing. Participating or not participating will not affect your grade or standing in the course.

**The survey will remain open for 11 days.** You'll receive a reminder email before it closes.

Thank you for considering participating. Your input is valuable and can help improve our understanding of student success in higher education.

If you have any questions, please feel free to reach out to the researcher: Caroline David at [cxd1051@sru.edu](mailto:cxd1051@sru.edu)

Best regards,

Caroline David

## APPENDIX D: INSTRUMENTATION

**Student version- Teacher-Student Relationship Inventory (S-TSRI)**

Using the 5-point Likert scale below, select the option that best reflects your relationship with your student and the degree to which each statement applies (1 = almost never true, 2 = seldom true, 3 = sometimes true, 4 = often true, 5 = almost always true).

1. I enjoy attending the class of this teacher.
2. My relationship with this teacher is positive.
3. If this teacher retires or leaves the school, I will miss him/her.
4. I am happy with my relationship with this teacher.
5. I like this teacher.
6. If I have a problem at home, I will ask this teacher for help.
7. I share about my personal life with this teacher.
8. If I need help, I will go to this teacher.
9. If I need someone to listen to me, I will go to this teacher.
10. I depend on this teacher for advice.
11. This teacher frustrates me more than other teachers who teach my class.
12. I cannot wait for this year to be over because I do not want to be taught by this teacher again.
13. If this teacher is absent, I feel relieved
14. If I am not taught by this teacher, I will be able to enjoy my class more.

**Motivated Strategies for Learning Questionnaire**

Please rate the following items based on your behavior in this class. Your rating should be on a 7-point scale where 1= not at all true of me to 7=very true of me.

1. I prefer class work that is challenging so I can learn new things.
2. Compared with other students in this class I expect to do well
3. I am so nervous during a test that I cannot remember facts I have learned
4. It is important for me to learn what is being taught in this class
5. I like what I am learning in this class
6. I'm certain I can understand the ideas taught in this course
7. I think I will be able to use what I learn in this class in other classes
8. I expect to do very well in this class
9. Compared with others in this class, I think I'm a good student
10. I often choose paper topics I will learn something from even if they require more work
11. I am sure I can do an excellent job on the problems and tasks assigned for this class
12. I have an uneasy, upset feeling when I take a test
13. I think I will receive a good grade in this class
14. Even when I do poorly on a test I try to learn from my mistakes
15. I think that what I am learning in this class is useful for me to know
16. My study skills are excellent compared with others in this class
17. I think that what we are learning in this class is interesting
18. Compared with other students in this class I think I know a great deal about the subject
19. I know that I will be able to learn the material for this class
20. I worry a great deal about tests
21. Understanding this subject is important to me
22. When I take a test I think about how poorly I am doing.

**Self-Regulation Questionnaire-Academic (SRQ-A) (Child Version)**

Please read each item and indicate the response that best describes how true it is for you.”

Response Options: Very true, Sort of true, Not very true, Not at all true

- A. Why do I do my homework?
  - 1. Because I want the teacher to think I'm a good student.
  - 2. Because I'll get in trouble if I don't.
  - 3. Because it's fun.
  - 4. Because I will feel bad about myself if I don't do it.
  - 5. Because I want to understand the subject.
  - 6. Because that's what I'm supposed to do.
  - 7. Because I enjoy doing my homework.
  - 8. Because it's important to me to do my homework.
- B. Why do I work on my classwork?
  - 9. So that the teacher won't yell at me.
  - 10. Because I want the teacher to think I'm a good student.
  - 11. Because I want to learn new things.
  - 12. Because I'll be ashamed of myself if it didn't get done.
  - 13. Because it's fun.
  - 14. Because that's the rule.
  - 15. Because I enjoy doing my classwork.
  - 16. Because it's important to me to work on my classwork.
- C. Why do I try to answer hard questions in class?
  - 17. Because I want the other students to think I'm smart.
  - 18. Because I feel ashamed of myself when I don't try.
  - 19. Because I enjoy answering hard questions.
  - 20. Because that's what I'm supposed to do.
  - 21. To find out if I'm right or wrong.
  - 22. Because it's fun to answer hard questions.
  - 23. Because it's important to me to try to answer hard questions in class.
  - 24. Because I want the teacher to say nice things about me.
- D. Why do I try to do well in school?
  - 25. Because that's what I'm supposed to do.
  - 26. So my teachers will think I'm a good student
  - 27. Because I enjoy doing my school work well.
  - 28. Because I will get in trouble if I don't do well.
  - 29. Because I'll feel really bad about myself if I don't do well.
  - 30. Because it's important to me to try to do well in school.
  - 31. Because I will feel really proud of myself if I do well.
  - 32. Because I might get a reward if I do well.