When personal becomes relational

Investigating the role of personality traits in affective student-teacher relationships

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Chapter 1

General Introduction

As every elementary school teacher will probably know, students show notable differences in how they behave, think, and feel. Some students are friendly and willing to give a helping hand to others in need, whereas other students tend to be aggressive or maintain a distance from others. Some students think in a thorough way—weighing pros and cons before acting—whereas others rely on quick, intuitive judgments to guide their choices. Emotional expressions and tendencies can vary too—whereas some students stay calm under pressure, others may react with noticeable distress. These consistent patterns in thoughts, feelings, and behaviors are captured by what personality psychologists refer to as "personality traits" (John, 2021; Shiner & Caspi, 2003).

Individual differences in personality traits can provide important implications for students' experiences and functioning in schools (De Raad & Schouwenburg, 1996; Jach et al., 2023; Mammadov, 2022). Specifically, personality traits have been theorized and found to be important for academic-relevant outcomes including academic performance, absenteeism, and academic dishonesty (see Cuadrado et al., 2021; Hessen & Kuncel, 2022; Lee et al., 2020; Mammadov, 2022, for meta-analyses). In addition, personality traits can be relevant for the social aspects of students' experiences in school, such as the affective relationships with teachers (see Mammadov & Avci, 2024 for a review). In particular, stable traits may influence how students perceive, interpret, and engage in student–teacher interactions, thereby affecting the emotional bonds they form with teachers (McAdams & Pals, 2006; McCrae & Costa, 2008).

Despite its theoretical relevance, empirical evidence on the association between personality traits and student–teacher relationship quality remains limited and inconsistent (Mammadov & Avci, 2024; Pancorbo et al., 2022; Zee et al., 2013). The current state of knowledge on personality traits and affective student–teacher relationships in the elementary phase seems to fall short in at least four ways. First, personality questionnaires that are suitable for upper elementary students are lacking, which limits our ability to examine these traits in association with affective student–teacher relationships (Hendriks et al., 2008; Mervielde & De Fruyt, 1999; Ober et al., 2021). Second, less is known about the (long-term) associations between students' personality and affective, dyadic student–teacher relationships (i.e., the emotional bond between individual students and teachers; c.f., Mammadov & Avci, 2024). Third, apart from students' personality traits, fewer studies have explored the role of teachers'

personality traits and virtually no work has investigated the interplay between students' and teachers' personality traits (e.g., personality similarity) in the affective, dyadic student–teacher relationships (see Kim et al., 2018; Pancorbo et al., 2022 for exceptions). Finally, most of the available studies have been conducted in Western educational settings, leaving unanswered whether the personality-relationship link can be found in Eastern contexts as well (Mammadov & Avci, 2024).

To address these research gaps, this dissertation aims to examine how personality traits are linked to affective, dyadic student–teacher relationships, a pivotal indicator of students' school functioning and social-emotional development (Emslander et al., 2025; McGrath & Van Bergen, 2015; Roorda et al., 2017). This dissertation focuses on upper elementary students, as affective student–teacher relationships have been found to decline in this period (Jerome et al., 2009; Spilt et al., 2012) and, at the same time, these relationships seem to become more important for students' school functioning across years (see Roorda et al., 2011for a meta-analysis). Furthermore, the upper elementary years are also suggested to be the time when personality traits can be more reliably measured than in the earlier years of elementary school (Barbaranelli et al., 2003; Brandt et al., 2020). This dissertation would contribute to a more comprehensive understanding of how upper elementary students' (and their teachers') personal characteristics shape the affective relationships during this critical developmental stage. The examination of this personality-relationship link may provide input for tailoring relationship interventions focusing on student–teacher relationships, echoing the personalized learning approach in the modern education.

Measurement of Personality Traits in Upper Elementary Students

Personality traits are commonly defined as the characteristic patterns of thoughts, feelings, and behaviors that are relatively consistent across time and contexts (Shiner & Caspi, 2003). Early researchers studied personality traits almost exclusively in adults. However, over the past two decades, a growing body of research has demonstrated that these traits exhibit sufficient stability to be reliably measured as early as the upper elementary school years (Barbaranelli et al., 2003; Brandt et al., 2020). Such findings not only challenge earlier assumptions about the developmental onset of stable traits but also open a window into understanding personality traits before adulthood and the potential life-course influence of these traits (Brandt et al., 2020; Shiner & Caspi, 2003).

To investigate personality traits among upper elementary school students, it is necessary to have a reliable and valid personality questionnaire that is suitable for this age group. Thus far, some personality questionnaires have been developed to measure personality traits for students before their adulthood. These questionnaires include the Big Five Questionnaire for Children (BFQ-C; Barbaranelli et al., 2003), the Five-Factor Personality Inventory (Hendriks et al., 2008), the NEO Personality Inventory–3 (NEO-PI-3), and the Revised NEO Personality Inventory (NEO-PI-R; De Fruyt et al., 2009). Multiple studies have demonstrated the reliability and validity of these personality questionnaires for the use with students aged 10-17 (e.g., Barbaranelli et al., 2003; Hendriks et al., 2008; Mervielde & De Fruyt, 1999).

Despite these advancements in personality questionnaires (see Shiner & Caspi, 2003, for a review), there are some difficulties preventing researchers from effectively and reliably measuring personality traits among upper elementary students. One such difficulty is that existing questionnaires tend to be rather lengthy, typically consisting of 60 items or more (Hendriks et al., 2008; Mervielde & De Fruyt, 1999). This can be burdensome for younger students due to their limited attention span. Such a lengthy questionnaire also limits its use in large-scale surveys where multiple constructs tend to be measured simultaneously (Kupper et al., 2021).

Another difficulty is that existing personality questionnaires may include items that are challenging for upper elementary students to understand, as many of these questionnaires were only validated with students aged 12 and above (De Fruyt et al., 2009; Ober et al., 2021). For instance, students aged between 12 and 17 reported that certain items in the NEO-PI-R, particularly those measuring the trait of openness (e.g., “cynical”, “skeptical”), were difficult to understand (De Fruyt et al., 2009). Similarly, the Big Five Inventory (BFI-2) demonstrated suboptimal model fit with the data from secondary school students, indicating a need for further refinement to suit younger age groups, such as upper elementary school students (Ober et al., 2021). These findings indicate that some adaptation or adjustment may be needed to make these personality questionnaires more suitable for upper elementary school students. To summarize, it seems necessary to have a short personality questionnaire that is appropriate for the use with upper elementary school students (**Aim 1**).

Beyond Academic Outcomes: Students’ Personality Traits and Affective Student–Teacher Relationships

The rich psychological variations, such as personality traits, are theorized to influence the way individuals feel, behave, and think (Shiner & Caspi, 2003). These individual variations can be important indicators of students' school functioning and adjustment, such as academic performance and academic dishonesty (De Raad & Schouwenburg, 1996; Jach et al., 2023; Lee et al., 2020; Mammadov, 2022). One of the seminal syntheses of research on student personality traits and school functioning was a scoping review conducted by De Raad and Schouwenburg (1996). This review found associations of personality traits with academic-related outcomes, including achievement motivation, test anxiety, and academic competence. To conclude their review, De Raad and Schouwenburg (1996) emphasized the need for further empirical investigation into how these enduring personality traits shape educational experiences and outcomes within the school environment.

Over the next three decades, a growing body of evidence has accumulated to support the relevance of personality traits in the school context (see Hessen & Kuncel, 2022; Lee et al., 2020; Mammadov, 2022; Meyer et al., 2023, for meta-analyses). Among the investigated variables, the most well-investigated outcome, not surprisingly, is students' academic performance, for which at least nine meta-analyses have been conducted (i.e., Chen et al., 2025; Hessen & Kuncel, 2022; Mammadov, 2022; Meyer et al., 2023; O'Connor & Paunonen, 2007; Poropat, 2009, 2014; Trapmann et al., 2007; Vedel, 2014). Moreover, there are other academically relevant outcomes that have been investigated such as absenteeism and academic dishonesty (Hessen & Kuncel, 2022; Lee et al., 2020).

Students' personality traits may also shape the social aspects of students' experiences and functioning in school (Hessen & Kuncel, 2022; Mammadov & Avci, 2024). One of these outcomes is the affective quality of dyadic student–teacher relationships which has been frequently found to be important for students' school adjustment and socio-emotional development (see Emslander et al., 2025, for a second-order meta-analysis). As suggested by developmental systems theory, personality traits as individual characteristics may influence affective student–teacher relationships (Pianta et al., 2003). Specifically, students' personality traits may shape how students perceive supporting behaviors provided by teachers and how students react to conflictual situations, thereby playing a role in the formation of their relationships (Buss, 1987).

Recently, one meta-analysis has been conducted to synthesize research on the link between personality traits and affective student–teacher relationships (Mammadov & Avci, 2024). This review revealed that students' personality traits are important for fostering high-quality student–teacher relationships (Mammadov & Avci, 2024). Notably, these authors were only able to include 12 studies about the link between students' personality traits and student–teacher relationships, indicating the paucity of research on the personality-relationship link in school (c.f., Mammadov, 2022). Moreover, this review did not differentiate between classroom climate/relationships at the group level (i.e., relationships between the teacher and the class as a whole) and relationships at the dyad level (i.e., between teacher and individual student). Differentiating between these relationships is crucial, as students and teachers who experience positive class-level student–teacher relationships may struggle to form a positive relationship with one specific student (Rucinski et al., 2018; ten Bokkel et al., 2023). It therefore remains intriguing to investigate whether the link found in Mammadov and Avci (2024) may apply to student–teacher relationships at the dyad level. In addition, the majority of studies included in the review by Mammadov & Avci (2024) adopted a cross-sectional design. Therefore, it is not yet clear whether personality traits have long-term effects on affective student–teacher relationships.

Affective student–teacher relationship quality may not only be a direct outcome of students' personality traits but also serve as a mediator that carries over the influences of personality traits to subsequent school outcomes, such as school engagement (Chen et al., 2021; De Raad & Schouwenburg, 1996). School engagement is defined as a multi-dimensional construct that includes students' engaged behaviors (e.g., paying attention, asserting effort) and their engaged emotions towards schoolwork (e.g., liking school, being interested), both of which have their unique influence on students' academic achievement (Skinner et al., 2008). Thus far, a large body of research indicates that affective student–teacher relationship plays a role in students' school engagement (see Martins et al., 2022; Roorda et al., 2017 for reviews). As students' personality traits may also influence affective student–teacher relationships (Mammadov & Avci, 2024), affective student–teacher relationships may serve as a proximal mechanism through which students' personality traits may influence their school engagement. However, as far as we know, only two studies so far

have examined this mediation model (Charalampous & Kokkinos, 2014; Chen et al., 2021), both adopting a cross-sectional design.

Considering these gaps, this dissertation aims to further advance our understanding of the role of students' personality traits in affective student–teacher relationships **(Aim 2)**. First, a review study was conducted to gain insights into the available literature on the role of students' personality traits in affective, *dyadic* student–teacher relationships. Second, empirical studies were conducted in which the link between students' personality traits and dyadic student–teacher relationships, both within one school year (cross-sectional design) and across two subsequent school years (longitudinal design), was investigated. Finally, in addition to conceptualizing affective student–teacher relationships as a direct outcome of personality traits, this dissertation also investigated affective student–teacher relationships as a mediating mechanism that transmitted the effects of students' personality traits to their school engagement.

Teachers' Personality, Personality Similarity/Dissimilarity, and Affective Student–Teacher Relationships

According to developmental systems theory (Pianta et al., 2003), both students' and teachers' characteristics are expected to play a role in the formation and development of student–teacher relationships. As such, it seems reasonable to expect that teachers' personality traits also play a role in affective student–teacher relationships (Pianta et al., 2003; Zee & Koomen, 2017). So far, however, most available studies have investigated teachers' or students' personality traits in isolation (e.g., Kim et al., 2018; Zee et al., 2013). As such, they were not able to examine the unique impact of teachers' personality traits above students' personality traits or vice versa. Without having the personality traits of the relationship partner controlled for, the importance of teachers' (or students') personality traits may be overestimated.

On top of both relationship partners' personality traits (i.e., students' personality traits and teachers' personality traits), the interplay of personality traits of students and teachers may be of importance as well (Back et al., 2023). Thus far, there are generally two ways to conceptualize the interplay of the personality traits of the two relationship partners. In the first way, the focus lies on the personalities of the two relationship partners have in common, called personality *similarity*. According to reinforcement theory (Byrne, 1997; Byrne et al., 1986), personality similarity is important for relationship formation, as individuals tend to be gravitated towards

those who are more similar to themselves, for example regarding personality traits. This inclination stems from a fundamental need to function in a logical and consistent world (Byrne, 1997; Byrne et al., 1986). More specifically, interacting with relationship partners who share similarities in their personalities may lead to positive feelings, such as a sense of connection and mutual understanding, as it reinforces the perception of a logical and consistent world (Anderson et al., 2003; Byrne, 1997; Byrne et al., 1986). As such, more similar personalities may lead to smoother interactions and a better understanding of each other's behaviors and, hence, more positive relationships (Anderson et al., 2003).

In contrast, other researchers have focused on personality *dissimilarity* and suggested that differences in personality traits may allow relationship partners to complement each other (Tracey, 1994). As such, being dissimilar in personality traits enables relationship partners to complement each other and contribute uniquely to their relationship, which may foster more harmonious relationships (Tett & Murphy, 2002). For instance, when partners differ in extraversion, the highly extraverted partner may prefer to take the lead, whereas the less extraverted partner feels at ease letting their partner handle the initiative (Sung et al., 2008). This dissimilarity in extraversion may, in turn, contribute to fewer conflicts in their relationships. Although both personality similarity and dissimilarity are theoretically pertinent to affective student–teacher relationship quality, empirical tests remain scarce (see Pancorbo et al., 2022 for an exception). In this dissertation, the role of teachers' personality traits, personality similarity, and personality dissimilarity in the affective student–teacher relationships is therefore further examined (**Aim 3**).

Investigating the Personality-Relationship Link in the Chinese Context

Finally, most available studies on the link between personality traits and affective student–teacher relationships are more often conducted in Western countries than in non-Western countries (Mammadov & Avci, 2024). This imbalance of studies can be alarming, as the findings from Western countries do not necessarily apply to Eastern countries. To bridge this gap, this dissertation included three empirical studies performed in China, an Eastern country.

With its distinctive educational system and collectivistic cultural norms, China provides a unique context to explore the association between personality traits and affective student–teacher relationships. Specifically, the educational system in China differs in various ways from Western countries. For instance, in Chinese elementary

schools, teachers typically specialize in a single subject rather than teaching all subjects. In addition, each class is also assigned a class teacher responsible for managing class affairs and overseeing students' well-being. In Western countries such as the Netherlands and the US, it tends to be that one teacher is responsible for almost all subjects and spends most of the time with one class during the day in elementary schools. Such features of Chinese educational system may play a role in the associations between personality traits and student–teacher relationships and thus are important to investigate.

In addition to the educational system, cultural values may be important contextual factors as they may shape the valence of certain personality traits in a given context (Allik et al., 2023), potentially influencing how personality traits are linked with affective student–teacher relationships. For instance, a large-scale study across 24 countries found that although the trait of openness was well-represented in many Western cultures, it was not consistently replicated in certain Eastern contexts, including China (De Fruyt et al., 2009). China is a typically collectivistic society that emphasizes maintaining harmonious relationships, in contrast to the individualistic cultures of many Western countries (Chen et al., 2019). This emphasis on harmony may strengthen the association between personality traits and relationship quality, compared to Western contexts. Aiming to enrich the field with an Eastern viewpoint, the empirical research included in this dissertation has been carried out in China to explore the link between personality traits and affective student–teacher relationships (**Aim 4**).

Overview of this Dissertation

The overarching aim of this dissertation is to investigate the role of personality traits in the school context, particularly focusing on how these traits shape the affective quality of dyadic student–teacher relationships. This overarching aim is pursued through both a systematic review of existing research and original empirical studies that include the development of a new measurement tool, further exploration of the personality–relationship link, and testing a mediation model in which affective student–teacher relationships act as a underlying mechanism to understand the link between personality traits and other school outcomes (i.e., school engagement). The dissertation aims to contribute to both theoretical understanding and practical approaches in educational settings.

In **Chapter 2**, a systematic review was conducted to synthesize existing research on the role of personality traits and personality similarity in the affective, dyadic student–teacher relationships. This review examined how students' personality traits are associated with affective student-teacher relationships in previous research (Aim 2) and how teachers' personality traits and the interplay of students' and teachers' personality traits (i.e., personality similarity and personality dissimilarity) are associated with relationship quality (Aim 3). As a comparison, this review study also explored how students' personality traits play a role in their relationships with other important adults in their lives, namely their parents. This allows for investigating the personality-relationship link across two different relational domains (i.e., students' affective relationships with parents and teachers).

To allow the empirical investigation of the personality-relationship link, a new questionnaire for upper elementary students was developed (Aim 1) and tested in **Chapter 3**. Using a multiple-stage approach, the questionnaire was first piloted in the pilot sample, then it was applied in another sample. Based on the results of this first study, some changes were made in individual items, to improve the reliability of the questionnaire and, subsequently this slightly adapted version was tested. Internal consistencies of each dimension, factor structure, and measurement invariance across age, grade level, and gender were investigated.

After developing an appropriate questionnaire for upper elementary students, **Chapter 4** examined the association between personality traits and affective student–teacher relationships in a comprehensive way. Specifically, this study first investigated whether students' personality traits were uniquely associated with affective student–teacher relationships, after accounting for teachers' personality traits (Aim 2). Second, in addition to students' personality traits, the link between teachers' personality traits and affective student–teacher relationships was explored (Aim 3). Lastly, the interplay between students' and teachers' personality traits (i.e., personality similarity or dissimilarity) in association with affective student–teacher relationships was examined as well (Aim 3).

Finally, to investigate the longitudinal associations between personality traits and affective student–teacher relationships (Aim 2), **Chapter 5** presents a longitudinal study with two waves of data collection in two consecutive school years. Students' personality traits assessed in the first year were investigated as predictors of relationship quality in the following school year. The analysis also evaluated whether

student–teacher relationship quality mediated the effects of these traits on subsequent school engagement (Aim 2).

The studies described in Chapters 3 to 5 were all conducted in China, in order to investigate the associations between personality traits and affective, dyadic student–teacher relationships in an Eastern context (Aim 4).