


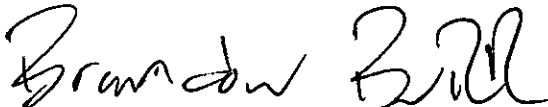
Attachment in Secondary Education: Effects of Student Attachment Bonds with Parents and  
Teachers on Student Motivation  
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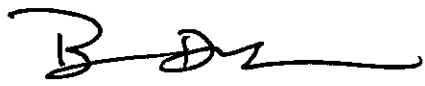
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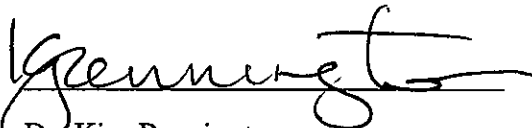
A THESIS

APPROVED FOR THE DEPARTMENT OF EDUCATIONAL SCIENCES, FOUNDATIONS,  
AND RESEARCH

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### **Abstract**

The consistent amount of time a student spends with educators throughout their childhood requires that researchers take steps to understand the extent of the impact these relationships might have. To better examine these relationships, the present research utilizes attachment theory as a framework through which student-teacher relationships impact student motivation beyond that of parent-child relationships. Motivation is measured via regulatory mode, which is a theory of self-regulation, and goal selection. Findings indicate that while teacher-student and parent-child attachments are correlated, student's motivation is predicted more by their attachment to their parent rather than attachment to a secondary educator.

*Keywords:* attachment theory, student-teacher relationships, motivation, regulatory mode theory, locomotion, and assessment

Attachment in Secondary Education: Effects of Student Attachment Bonds with Their Parents  
and Teachers on Their Motivation

The bond formed between a student and teacher is crucial, as it relates to a child's educational outcomes. Many educators can cite the reason they began in their profession as the profound impact a teacher had upon them. The need to understand the bond that forms between teachers and students is important in understanding effects teachers have in the lives of many current and former students. The inevitable contact between student and teacher throughout the educational process requires scrutiny of the impacts and effects these relationships might have.

As a high school educator, I often reflect on my time spent in high school. I try to focus on the reasons I did well in school. Often, I can trace my motivation to one or more teachers with whom I was especially close. In fact, like most educators, the reason I began teaching was due, in part, to an influential teacher. My high school world history teacher was not only a great educator, but someone with whom I felt accepted and free to expand my practice of learning. Because of this teacher, I felt more secure and capable in my educational efforts. Educators strive to be that influence for their students, unfortunately there are times in which negative relationships educators form with students might be detrimental to students' progress within academic outcomes. Research into the impact these relationships have on students will better inform educators the impact, positive or negative, they have on their students' performance.

Substantive evidence to link student-teacher relationships and academic outcomes is becoming increasingly thorough. Wentzel (1997) found a link between students' perceptions of teacher caring and on-task behaviors. Others report caring teachers produce higher motivation in their students (Danielson, Wium, Wilhelmsen, & Wold, 2010; Maulana, Opdenakker, & Bosker, 2013; Murdock & Miller, 2003). Additionally, Johnson (2008) identified students' views on

what teachers do to promote resilience within the classroom. The most prevalent of which is availability and accessibility to students. Both of these practices, availability and accessibility, are necessary requisites to the development of secure attachments between caregivers and adolescents. Understanding the impact of these relationships on students' various academic outcomes is crucial to help them to develop and achieve their academic goals. The discussion below outlines attachment theory, regulatory mode theory, and how each of these theories allows researchers to examine the role of relationships on motivation.

### **Literature Review**

Attachment theory is one lens through which researchers can examine student-teacher relationships to develop meaningful conclusions. There has been a wide range of research studying the impact of attachment on a student's educational context on achievement (West, Mathews, & Kerns, 2013), executive function at the beginning of schooling (Bernier, Beauchamp, Carlson, & Lalonde, 2015), academic motivation (Wong, Wiest, & Cusick, 2002; Gore & Rogers, 2010), autonomy (Wong et al.), self-regulation (Orehek, Vazeou-Nieuwenhuis, Quick, & Weaverling, 2017), and adjustment (Al-yagon & Mikulincer, 2003). While this is not an exhaustive list, it provides evidence of the research into the relationship between attachment theory and education. Below, the review of literature will provide an overview of attachment theory and regulatory mode theory and examine some of the ways in which attachment has been studied in various educational contexts. A link is made between attachment and three educational domains: academic achievement, motivation, and social adjustment. Regulatory mode theory is a theory of self-regulation and goal selection and is utilized in one attachment-motivation study discussed in the following.

## **Attachment Theory**

The theory of attachment is a framework that explains personality development from an ethological approach (Bowlby, 1969, 1973, and 1980). This developmental theory suggests that how a primary caregiver responds to a child's attachment behaviors, or bids, impacts the personality development of that child. These bids, according to Bowlby (1969), are phylogenetic in that they serve an evolutionary purpose of preservation via the maintenance of proximity to the primary caregiver. For example, the development of a healthy attachment to a caregiver allows an infant to take part in non-attachment behaviors, that is behaviors not focused on the maintenance of security (Mikulincer & Selinger, 2001). Ainsworth (1979) continued Bowlby's work and developed the Strange Situation, a process for identifying attachment styles in infants. Infants were subject to separation and reunion from their primary caregiver in an unfamiliar environment. The child's behavioral responses - reduced exploration, seeking of contact or proximity to mother, anxiety or distress, or avoidance and ignoring of caregiver - allowed Ainsworth to classify infant behaviors into three attachment styles: secure, insecure-avoidant, insecure-anxious/ambivalent. Below is a brief overview of key concepts in understanding attachment theory, each building on one another to form a framework of attachment theory.

**Attachment Figures.** A child's caregiver is known as an attachment figure, who can take one of two forms: safe-haven or secure base. The two forms of attachment figures are not mutually exclusive, but each fulfills a specific purpose for the development of a child. A child orients towards a safe-haven attachment figure in search of security. Generally, a child attempts to maintain proximity to their safe-haven in hoping to preserve felt security while the secure base attachment serves as a foundation from which a child can explore his/her surroundings. While both attachment figures are similar, each performs a distinct function regarding attachment

theory. An example of a safe-haven would be a child crawling to maintain proximity to their mother as she moves throughout the house. An example of a secure base attachment might be a child exploring outward from his father when in an unfamiliar location, like a park. The development of the attachment bond arises in a dyadic fashion, both through the response of a caregiver to the needs of a child, and the bids of the child for their primary caregiver (Mikulincer & Selinger, 2001). In infancy all attachment behaviors are aimed at promotion of proximity to a caregiver. The caregiver's response to these behaviors are internalized by the infant and begin to represent their inner working model (Ainsworth, 1989).

**Attachment Styles.** There are two primary attachment styles that stem from a child's relationship with their primary caregiver: secure and insecure. Insecure attachments are further broken into two categories: insecure-anxious/ambivalent, and insecure-avoidant (Hinde, 1997). A secure attachment is present in most individuals and is achieved via a responsive caregiver mainly through skin to skin contact in the first year and beyond (Ainsworth, 1979), general responsiveness to attachment behaviors, and initiation of contact/interaction with a child (Lewis & Fairling, 1989). Lewis and Fairling (1989) recorded specific behaviors of caregivers in their study: "touching, holding, vocalization, look, smile/laugh, play, kiss, and rock[ing]" (p. 832). They categorized into either distal or proximal contact, with the latter oriented around direct contact. Anxious/ambivalent attached individuals experience their primary caregivers as inconsistently sensitive to their attachment behaviors. Finally, avoidant individuals have primary caregivers who were consistently unavailable for and unresponsive to their attachment behaviors (Weiss, 1998). Hinde (1997) identified a fourth attachment style: disorganized. This attachment style was first introduced by Main and Solomon (1986) and is primarily used in the Strange Situation with infants (Duschinsky, 2015). The disorganized attachment style is closely related,



but not exclusive to children who suffer from dissociation in childhood (Carlson, 1998), child abuse (George & Main, 1979), and trauma (Dutra, Bureau, Holmes, Lyubchik, & Lyons-Ruth (2009).

The relationship with a primary caregiver develops into an internal working model - as sometimes global or general attachment - is the prevailing attachment guiding most future relationships an individual might have (Bowlby, 1969). This attachment to primary caregiver instills a sense of expectations that inform individuals of what may be expected from other relationships, which in turn, inform immediate and future responses to those expectations (Bretherton, Ridgeway, & Cassidy, 1990). Bretherton et al. go on to suggest that this internal working model of individuals serves as a filter or lens through which all other relational information is processed and will only change when “lack of fit between the working model and actual circumstances becomes very obvious” (p. 227, 1990).

While attachment style stems from interaction with a primary caregiver, Cassidy (1999) suggested that the attachment style of an individual is not only manifested dyadically, but represents the internal working model of an individual, indicating that the attachment style of an individual extends beyond a single, primary relationship to all relationships. Pianta, Hamre, and Stuhlman (2003) suggested that attachment theory is a crucial tool in analyzing how the role of child-adult relationships affect development. Since individuals can form more than a single attachment, this suggests that an individual’s personality development is linked to an attachment network rather than a single attachment figure.

**Attachment Networks.** Trinke and Bartholomew (1997) found that individuals identify having upwards of five attachments ( $M = 5.33$ ,  $SD = 2.14$ ), while Orehek et al. (2017) along with Barry, Lakey, and Orehek(2007) suggested that an individual's attachment system varies between

relationships (e.g. individuals might be securely attached to their primary caregiver, while demonstrating an insecure attachment toward a different parental figure). Trinke and Bartholomew (1997) found the length of time spent with a romantic partner correlates to assessment of the partner as a secure base ( $R = .25, p < .05$ ), and the frequency of contact was related to appraisal of individuals, other than mothers, as attachment figures (range of  $R = .16$  [ $p < .05$ ] to  $R = .41$  [ $p < .001$ ]). The researchers also ranked the utility of the attachment figures with mothers and partners nearing the top, fathers and siblings in the middle, and peers at the bottom of the observed hierarchy (1997).

Cugmas (2007) examined the distinction between mother/father attachments and kindergarten teacher attachments to children identified the child's attachment to each as independent of the other, suggesting that attachments are relationship specific. An individual might exhibit a secure attachment to their primary caregiver while simultaneously exhibiting behaviors of an anxious/ambivalent attachment toward a peer or an intimate partner. This suggests that while a student displays a secure relationship with their primary caregiver, in the school setting they might demonstrate alternative attachment styles toward their teachers and peers. Understanding where teachers fall in a hierarchy of attachment relationships and the extent to which student-teacher relationships impact students will help educators understand the role they play within a student's working model.

Research suggested that attachment to teachers might provide benefits above and beyond that of attachment to parents. Mitchell-Copeland (1996) suggested that teacher-student relationships ( $\Delta R^2 = .113$ ) are more predictive of prosocial behaviors than mother-child attachment ( $R^2 = .057$ ) This conclusion is based on four social competence scales. Two of which are researcher observances, one is a peer popularity scale, and the final is a teacher assessment of

students' prosocial behaviors. The popularity and teacher scales could demonstrate why there might be an increasingly positive effect size for teacher attachment than parent attachment, as they were reported by the teacher and not the student. Additionally, van Ijzendoorn et al. (1992) identified that multiple attachments were likely when examining children with professional caregivers. That research found that individuals with three secure attachments are better off cognitively and socio-emotionally than those with fewer secure attachments. Finally, Howes, Rodning, and Galluzzo (1988) found that 13 (31%) of their participants ( $n = 42$ ) who were insecurely attached to their parents were securely attached to their caregiver in daycare. The researcher noted specifically that those participants exhibiting both insecure attachments to parent and caregiver were the least sociable.

In his theoretical framework *A Taxonomy of Relationships*, Weiss (1998) suggested that throughout an individual's life multiple attachment figures might arise beginning with parental attachment. This is usually followed by a pair-bond relationship in which an individual is attached to a significant other, generally a close friend or spouse. In these types of attachment relationships, Weiss put forward that both partners fill the role of attachment figure and benefactor of that attachment. The final attachment relationship identified by Weiss is that of guidance-obtaining, in which the benefactor grants some form of counsel or direction in a professional setting and is a likely an attachment relationship that would form between a student and teacher. At present, research hasn't identified what role an attachment to a teacher plays within this theoretical framework, but attachment to a teacher is well studied (e.g., Al-yagon & Mikulincer, 2003; De Laet et al., 2014; Learner and Kruger, 1997; Mitchell-Copeland, 1996; and Sierra, 2017)

### **Regulatory Mode Theory**

Regulatory Mode is a self-regulation theory focused on individual goal orientation and goal setting through a system of two domains: locomotion and assessment. According to Kruglanski et al. (2000), “self-regulation involves comparing and selecting among alternative desired end-states, comparing and selecting among alternative means to attain the selected desired end-state, and initiating and maintaining movement from some current state toward the desired end-state until the desired end-state is attained” (p. 794). Self-regulation is the process of introspection of one’s current or desired state, contemplation of the process of attainment and selection of a goal, and movement toward achieving one’s goal. The two domains within self-regulation generally produce correlations between one another but can act as independent variables of self-regulation (Higgins, Kruglanski, & Pierro, 2003). Locomotion is an individual’s tendency of movement toward or away from some state. Individuals considered high in locomotion would be considered doers and go-getters and demonstrate a need to obtain a goal. For example, the Locomotion aspect of Regulatory Mode Theory might be an individual setting aside time to study for a test – high locomotion – or just “winging it” – low locomotion. Assessment is an individual’s measurement of “[a] discrepancy between the current state and some desired end state, as well as the rate of progress in reducing the discrepancy” and can be characterized by the evaluation of experiences throughout one’s day (Higgins, Kruglanski, & Pierro, 2003, p. 297). Using a similar example as before, Assessment, might involve determining whether or not one needs to study, or what grade is needed to maintain an A in a class.

Pierro, Giacomantonio, Pica, Kruglanski, and Higgins (2011) in their study of undergraduate students found increased assessment to be predictive of increased procrastination  $\beta = .946, p < .01$ ). Orehek et al. (2017) later found that students’ regulatory mode impacted self-

report procrastination ( $R^2 = .467$ ) Learner and Kruger (1997) found a link between attachment both to parent-to-child and teacher-to-student motivation. In their study of children in Germany and Iceland, Suchodoletz et al. (2013) found teacher-rated self-regulation to be significantly related to mathematics scores in Germany ( $\beta = .89, p < .05$ ), and vocabulary scores in Iceland ( $\beta = 14.88, p < .01$ ).

### **Attachment in Education**

The theoretical perspective of attachment provides a lens through which researchers can empirically examine student relationships (Pianta, Hamre, & Stuhlman, 2003). Taking it a step further, the necessary focus on the student-teacher relationship and the impacts of those relationships on student outcomes requires a theoretical lens adept at operationalizing the causes and effects of the relationships. While attachment is only one theoretical perspective to examine student-teacher relationships, it has been adopted by researchers to understand the effect of these relationships (e.g., Al-yagon, 2003; Bernier et al., 2015; Cugmas, 2007; De Laet et al., 2013; Mitchell-Copeland, 1996; Wong Wiest, & Cusick, 2002). In an education setting attachment to parent or teacher is correlated with achievement, motivation, and sociability. Each of which are necessary aspects of the goal of education - socialization and the creation of an active, informed and engaged citizenry. The following is an examination of research connected to each of these academic domains.

**Academic achievement.** Studies have shown a link between attachment to teachers and caregivers and academic achievement using a wide variety of assessments from grade point average (GPA) and intelligence quotient (IQ) to achievement tests. In the study of 58 mother-child pairs, Bernier et al. (2015) compared child attachment to caregiver on the child's executive function from 15 months and two years of age. Their findings suggest a reliable link between

attachment style and performance on the executive function battery - a series of assessments designed to test a child's process, planning, selective attention, and classification skills. Students with secure attachments performed better than students with insecure attachments. Increasingly the researchers found that the child's attachment and execution were not linked to the child's socioeconomic status. This suggests a positive correlation between quality of attachment, early attachment relationships, and executive function.

Hughes (2011) examining Teacher-Student Relationship Quality (TSRQ) via teacher and student reports of the relationship, which is based in part on attachment theory, examined the correlation between student-teacher relationships and academic achievement. This study examined 714 elementary students and found that the TSRQ predicted outcomes on students' academic performance in math and reading. Students with higher perceptions of support from their teachers performed better on the achievement assessment. While the TSRQ does not assess students along the secure-insecure scale, its assessment of support within relationships is congruent with the theoretical perspectives of attachment. In another similar study, Wacha (2010) distinguished between fluid intelligence and crystallized intelligence as it relates to attachment. The former has to do with innate cognitive ability, while the latter is experientially developed through "learning, knowledge and skills that are accumulated from past experiences" (p. 9). Wacha (2010) found a significant mean difference ( $t(42) = 2.29, p = .027$ ) between Secure attachment ( $M = 112.54, SD = 14.01$ ) and Avoidant attachments ( $M = 102.54, SD = 8.66$ ) on crystallized IQ. Alternatively, Wacha (2010) found no significant correlation between attachment and academic achievement. This is an outlier in the body of current research.

O'Connor and McCartney (2007) found in their longitudinal study that "high-quality teacher-child relationships foster children's achievement" (p. 361). Finally, in their meta-analysis

of 99 studies, 31 of which examined secondary schools, and 129,423 students, Roorda et al. (2011) identified a small to medium fixed and random effect size ( $R = .16, p < .01$ ; for both) between positive student-teacher relationships and academic achievement, and negative student-teacher relationships and academic achievement (fixed:  $R = -.15, p < .01$ ; random:  $R = -.18, p < .01$ ). The meta-analysis had six inclusion requirements:

1. Statistically significant effect size for relationships and engagement or achievement;
2. Teacher student relationships, engagement, and achievement must all be individual variables;
3. Participant must be in K-12 education;
4. Teacher student relationships must be considered an independent variable;
5. Teacher student relationships must be measured dyadically, rather than via group; and
6. All studies must be in English.

Exclusions were made via three rules:

1. Scales which examined dependency as a variable of teacher student relationships were not examined;
2. Scales which measured extracurricular engagement were not used; and
3. Only actual measures of student performance - grades, test, and teacher reports - were used.

**Motivation.** The link between student attachment and motivation has been well-studied over the past 20 years, beginning with the work of Lerner and Kruger (1997) who identified attachment to parent and teacher as predictive of student motivation. Following up Learner's and Kruger's research, Wong, Wiest, and Cusick (2002) corroborated student attachment to parents as predictive of motivation. Danielson et al. (2010) examining perceived pedagogical caring, or

“the quality of the classroom student–teacher relationship” (p. 250), which is linked to attachment, as a predictor of academic motivation ( $R = .20, p < .001$ ). The researcher found a strong correlation ( $R = .75$ ) between pedagogical caring and student perceived autonomy, which the author noted are both provided primarily by the teacher. When pedagogical caring and student perceived autonomy are combined into one construct they present an even stronger connection to motivation ( $R = .86, p < .001$ ). Work by Gore and Rodgers (2010) suggested that securely attached individuals demonstrate motivation through an increase in studying time.

The most extensive research on academic motivation and attachment comes from the Orehek et al. (2017) study of 201 undergraduate students. They identified a link between attachment security and motivation through a two-part assessment of locomotion and assessment. Their research found that individuals with secure attachments score high in locomotion and moderate in assessment suggesting they don't engage in excessive comparison. Anxious/ambivalent attached individuals demonstrated higher assessment of situations, and insecure-avoidantly attached individuals demonstrated a decrease in locomotion. While this study focuses on undergraduate students' attachment to their peers, it demonstrates there may also be evidence for a relationship between attachment styles and educational context similar to that of high school, in that the amount of time students spent with college instructors is similar to the amount of time spent with secondary educators. The researchers found an association between high assessment and performance (i.e., the meeting of a defined goal). In addition, Kruglanski et al. (2000) found that students high in locomotion are more likely to orient toward mastery, i.e., “the development of proficiency at [an] activity” (p. 803). This link between locomotion and assessment and achievement provide further justification for its inclusion as a



measure of students' motivation. The identification of these links between attachment and regulatory mode create a foundation for future research linking the two theories.

**Social Adjustment.** The final aspect of attachment research in education is related to students' social adjustment. Social adjustment can be classified in a variety of ways, including socio-emotional adjustment, prosocial behaviors, well-being, and affiliation. Al-yagon and Mikulincer (2003) delineate social adjustment into two categories: loneliness and sense of coherence. The researchers identified a sense of coherence as a general coping mechanism in stressful situations. Subjects' sense of attachment security as measured by the Children's Appraisal of Teacher as a Secure Base (CATSB) instrument predicted an improved sense of coherence (Al-yagon & Mikulincer, 2003). Additionally, participants' attachment security was found to predict their self-reported loneliness, whereas individuals who reported secure attachments to their homeroom teachers reported a reduced feeling of loneliness. Armsden and Greenberg (1987) found that securely attached individuals, as compared to insecurely attached individuals, reported higher self-esteem and life-satisfaction, both of which are aspects of well-being.

Mitchell-Copeland (1996) identified a link between secure attachments to teachers and prosocial behaviors towards students' peers ( $\Delta R^2 = .113$ ). Mikulincer & Selinger (2001) examined the role of attachment to students' same-sex best friend and found that secure attachments within these relationships predicted a student's ability "to spend time in the company of others, to be involved in friendships, and to engage in a variety of social activities, such as play, exploration, alliance against outsiders, and squabbles" (p. 84), rather than with patterns of security seeking behaviors. Behaviors such as the: "[drive] to maintain or restore proximity to those persons who can provide support or assistance in managing the impinging

distress” (p. 82) for secure attachments, “emotional distance and self-reliance,” for avoidant attachments, and “desire for enmeshed relationships and fear of rejection” (p. 83) for anxious/ambivalent attachments. While this study does not explicitly link student attachment to parents or teachers, it does suggest that secondary attachments—non-caregiver attachments, specifically peers—can have positive effects on social outcomes.

**Attachment in High School.** While the research does investigate attachment in late adolescence (Pianta, Hamre, & Stuhlman, 2003), relatively few empirical studies were found that addressed attachment in the high school education setting (e.g., D’Arrisso, 2010; Learner & Kruger, 1997; Wong Wiest, & Cusick, 2002). Wong et al. (2002) examined the relationship between parent-attachment and motivation in sixth and ninth grade students and found a link between parental attachment and intrinsic motivation. Specifically, students with secure attachments desire work that is challenging and demanding. D’Arrisso (2010), examining the effects of adolescent attachment on 76 First Nation – Native American – youth, found a link between secure attachments to fathers and academic achievement, but no such correlation presented itself in attachment to mothers. Learner and Kruger (1997) found in their study of rural high school student ( $n = 150$ ) that both teacher and parent attachment correlate with student motivation. The research examined two-parent attachment, using the Inventory of Parent and Peer Attachment (IPPA), (Armsden and Greenberg 1987), and teacher attachment, using a rewriting of the IPPA inventory replacing mother/father with teacher. Motivation was measured using a self-regulation scale from the Motivated Strategies for Learning Questionnaires (Pintrich and De Groot, 1990). Learner and Kruger (1997) examined the combined impact of parent and teacher attachment on student self-regulation ( $R^2 = .26, p < .001$ ). Future research will need to examine the extent to which teacher attachment explains student motivation above and beyond

that of parent attachment. The above was the only study found that investigated the effects of attachment to a teacher on motivational outcomes exclusively in high school students, suggesting a significant gap in the research on the link between secondary education and attachment.

### **Present Research**

The present research will examine the relationship of attachment to motivation in high school seniors. Motivation was chosen because of ease of data collection, a single survey. Originally, academic achievement was to be studied, but a time constraint required the researcher to make adjustments in the present study. Research presents a link between attachment and motivation in earlier years of education and on into postsecondary education. Within the high school setting, the research between attachment and motivation is limited and needs additional data to build this body of research.

Research presented above suggests a link between attachment to parent and an individual's motivation, but there is very little research in examining parent attachment and motivation in high school students. There is a clear gap in the research as it pertains to the extent to which attachment relationships between child-parents and students-teachers affects student motivation. The student-teacher relationship is crucial in the educational outcomes of students, and the ability of attachment theory to understand the dynamic multiple relationships students have provides a meaningful lens to do so. In order to better understand this relationship, educators need a framework through which understanding might be achieved. The foundation of Attachment Theory is centered on personality (Bowlby, 1969) and provides a useful framework with years of empirical validation which is beginning to make deep rooted links in educational settings. Data will be collected from self-reported measures on attachment to teachers and parents. Motivational outcomes will be tested using the Locomotion and Assessment Scale

(Kruglanski et al., 2000). If the findings suggest student-teacher attachment mitigates negative effects of parent-child attachments, it would increase the importance of developing secure attachments with all students.

### **Research Questions**

1. To what extent does parent-child attachment explain a child's locomotion and assessment in high school seniors?
2. To what extent does teacher-student attachment explain a child's locomotion and assessment in high school seniors?

### **Methods**

#### **Participants**

A convenience sample of student participants were recruited from an inner city public high school in Oklahoma. All participants were high school seniors taking a mandatory senior level class. Participants ( $n = 45$ ) were 18 years old, 65% were male, and 35% were female. Five respondents marked their age as less than 18 and were removed as they did not have parental consent to participate, and a single respondent who did not complete the motivation scales was also removed from the study. The school and district serve urban students with district demographics of 52% Hispanic, 24% Black, 19% White, 3% Native American, and 2% Asian students. While the district participates in a 100% free and reduced lunch program, approximately 86% of students at the participant school qualify under federal guidelines. Respondents to this study were approximately 69% Hispanic, Latino, or Spanish; 11% Black; 9% White; 9% American Indian; and 2% Asian; three participants identified as multiracial. All participants were in one of three on-level government classes taught by the same teacher, which students had been a part of for approximately an entire school year. Student responses were not

gathered from the teacher's Advanced Placement (AP) classes as administration of the survey coincided with the AP Government Test. The administration of the instrument was by the researcher, and the participating teacher was not present at the time the survey was given.

### **Instruments**

*The Children's Appraisal of Teacher as a Secure Base (CATSB) Scale.* This scale (Al-yagon & Mikulincer, 2003) was developed to gauge middle school students' appraisals of their homeroom teachers as attachment figures (see Appendix A). This is a self-report scale focused on responsiveness and availability of teachers. The scale is delineated into two distinct subscales: availability/acceptance ( $\alpha = 0.90$ ) and rejection ( $\alpha = 0.72$ ). The former contains eighteen items, and the latter includes eight. The measure asks students to respond to items using a 7-point Likert scale ranging from "does not apply at all (1)" to "applies very much (7)." Al-yagon and Mikulincer (2003) examined the association between the CATSB and global attachment and found significant correlation with each of the attachment styles. The study finds (2003) "the availability/acceptance factor represented children's appraisal of their teacher as available in times of need and accepting of their needs, feelings, and behaviours. The rejection factor reflected children's appraisal of their teacher as rejecting" (p. 11).

*Inventory of Parent and Peer Attachment (IPPA-R).* The IPPA scale was originally developed by Armsden and Greenberg (1987) to assess attachment to peers and parents (see Appendix B). The IPPA-Revised was adapted for use with adolescents by Gullone and Robinson (2005). The parent portion—specifically the trust subscale ( $\alpha = 0.91$ ), the communication subscale ( $\alpha = 0.91$ ), and the alienation subscale ( $\alpha = 0.86$ )—will be used in the present study. Students responded using a 5-point Likert scale ranging from "Almost Never or Never True (1)" to "Almost Always or Always True (5)." Participants responded to this measurement at the

beginning of the research. This scale was modified from its two-parent form (mother and father) to a single primary caregiver; this was done to reduce the number of questions required of the student participants and to reflect the possibility of students within single-parent households.

*The Locomotion and Assessment Scales (tLAS)*. This theory was developed by E. Tory Higgins and Arie W. Kruglanski for which they developed a 12-item scale for each domain with validity and reliability data to support their instrument (Kruglanski et al., 2000). The scale includes five faking items, making the total number of items on the combined scale 31 (see Appendix C). The locomotion subscale was developed and studied for validity via ten studies. The first of which narrowed the scales to their current item counts, several of the studies examined the reliability and validity of the measure, and one analyzed the scales relationship to goal selection (Kruglanski et al., 2000). The first test of validity began with structural validity in which the researchers tested model fit across four samples (goodness-of-fit index [*GFI*], .80) and unidimensionality (*GFI*  $\approx$  .80 for each subscale) of each of the scales. Study three examined the cultural validity of the measures, in which the researchers translated both scales into Italian and performed similar one-factor model tests and found similar scores (*GFI*  $>$  .91 for both subscales) as previous non-Italian samples. Study four examined main effect of group ( $F[1, 4254] = 11.85, p < .005$ ) and scale ( $F[1, 4254] = 856.53, p < .001$ ) comparing two groups, one college group one military group, in which the college group scored slightly higher on assessment and the military group score slightly higher on locomotion. Convergent and discriminant validity was studied next. Convergent demonstrated very little correlation ( $R[4256] = .11, p < .001$ ) between the two subscales. Discriminant validity was addressed comparing responses to both subscales to political orientation, social dominance, ingroup favoritism, race, and sex, none of which were predictive of responses.

## **Procedure**

Students who agreed to participate in the study were given the three instrument, 86-item questionnaire that was expected to take an entire class period, 58 minutes total: 5-10 minutes for administrative and introductory procedures, and 48-53 minutes to complete the survey. The questionnaire is broken down into three parts: 25-item CATSB, 25-item IPPA-R, and the 31-item Locomotion and Assessment Scales.

## **Results**

All data analyses were run through the SPSS Statistics program using the guidelines provided by Tabachnick and Fidell (2007). First, descriptive statistics are presented below. Second, Pearson's  $r$  was calculated between each scale and subscale for all measures. Third, a T-Test was performed to evaluate self-reported differences between high and low attachment on each of the teacher and parent attachment scales for the Locomotion and Assessment scales. Multiple Linear Regression was calculated to determine the correlation between teacher attachment to Locomotion above and beyond that explained by a primary caregiver; multiple regression was not performed on total CATSB and IPPA-R as bivariate correlations yielded no significant relationships. Finally, a one-way analysis of variance (ANOVA) was completed by attachment style and score on the tLAS.

## **Descriptive Statistics**

Whole sample mean scores and standard deviations of each scale were computed: CATSB ( $M = 60.27$ ,  $SD = 22.46$ ), IPPA-R ( $M = 45.04$ ,  $SD = 21.69$ ), Locomotion ( $M = 48.24$ ,  $SD = 9.50$ ), and Assessment ( $M = 43.62$ ,  $SD = 7.62$ ). The means and standard deviations of student Sex are reported in Table 1, there is little difference in means between groups on any of the scales or subscales. There is little difference in mean difference between Race/ethnicity group

scores on each of the scales. Because there were no mean group differences in the above analyses they were not included in the first level multiple regressions. A Shapiro-Wilk tests of normality was conducted on all scales, results suggest normal distribution ( $p > .05$ ) for the CATSB, its Availability/Acceptance subscale, and the Communication subscale of the IPPA-R. All other scales did not demonstrate normal distribution ( $p < .05$ ), however, T-tests, ANOVA and multiple regression are robust with regards to non-normality.

Table 1

*Means of Variables*

	Male (n=29)		Female (n=16)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. CATSB	60.41	23.42	60	21.34
2. CATSB (Availability and Acceptance)	76.65	20.94	77.12	17.83
3. CATSB (Rejection)	16.64	8.30	17.12	7.72
4. IPPA-R	43.93	22.67	47.06	20.35
5. IPPA-R (Trust)	36.79	9.96	39.06	8.20
6. IPPA-R (Communication)	30.31	9.49	32.12	8.30
7. IPPA-R (Alienation)	23.17	6.24	24.12	5.90
8. tLas (Locomotion)	48.34	10.68	48.06	7.18
9. tLas (Assessment)	43.79	8.06	43.31	5.68

### Bivariate Regression

Table 2 shows medium strength relationship between attachment to parent (IPPA-R) and attachment to teacher (CATSB). The higher a student self-reported their primary caregiver attachment, the more likely they rated their attachment to their teachers as high. Interestingly the Trust and Communication subscales are significantly related to the Availability/Acceptance subscale, but the Alienation subscale is not related to the Rejection subscale. As a result, linear



regression was done to identify a change in  $R^2$  to explain the impact of teacher attachment above that of attachment to primary caregiver. The highest correlations within Table 2 are between subscales and the scales total scores, as the researcher expected.

Table 2

*Partial Correlations between All Scales*

	1	2	3	4	5	6	7	8	9
1. CATSB	1	.936**	-.503**	.512**	.468**	.511**	.322*	.429**	-.033
2. CATSB (Availability and Acceptance)		1	-.166	.484**	.494**	.534**	-.147	.404**	.020
3. CATSB (Rejection)			1	-.246	-.147	-.122	.470**	-.210	.142
4. IPPA-R				1	.926**	.943**	.744**	.491**	-.072
5. IPPA-R (Trust)					1	.844**	-.512**	.528**	.105
6. IPPA-R (Communication)						1	.583**	.427**	-.048
7. IPPA-R (Alienation)							1	-.306*	.348*
8. tLas (Locomotion)								1	.077
9. tLas (Assessment)									1

Note. \*\*. Correlation is significant at the 0.01 level.

\*. Correlation is significant at the 0.05 level.

Table 2 identifies a positive correlation between the alienation subscale on the IPPA-R and the Assessment portion of the tLas. This is the only statistically significant predictive variable of student's Assessment, suggesting that students who feel alienated from their primary caregiver are more likely to have high Assessment tendencies. Locomotion, however, is significantly correlated to all of the attachment subscale except the Rejection subscale of the CATSB.

### Independent T-Test

Independent T-tests were performed to evaluate the differences in motivation between high and low attachments to primary caregiver and teacher. Each T-test was run using the median value of each set of responses as the cut point, creating a relative high and low secure attachment among the responses. T-Test returned a mean Locomotion Score ( $M = 52.65$ ,  $SD = 9.31$ ) for high secure attachment which was significantly higher than the mean Locomotion Score ( $M = 43.63$ ,  $SD = 7.40$ ) of low attachment, showing significant difference between conditions [ $t(43) = 3.584$ ,  $p = .001$ ] the high and low parent attachment groups. There was no significant difference between low ( $M = 43.72$ ,  $SD = 7.58$ ) and high ( $M = 43.52$ ,  $SD = 7.83$ ) parent attachment on Assessment observed [ $t(43) = -.089$ ,  $p = .929$ ]. Another set of T-tests were run on attachment to teacher, again with the median at the cut point. Mean score for Locomotion in the high attachment group ( $M = 50.60$ ,  $SD = 9.32$ ) and low attachment group ( $M = 45.77$ ,  $SD = 9.25$ ) demonstrate a slight but statistically insignificant difference between groups;  $t(43) = 1.746$ ,  $p = .088$ . Mean score for the high attachment group and Assessment ( $M = 43.91$ ,  $SD = 8.32$ ) and low attachment group ( $M = 43.91$ ,  $SD = 7.01$ ) identified almost no difference between conditions;  $t(43) = .259$ ,  $p = .797$ . The T-tests suggest there is a difference, between high and low secure parent attachment and students' locomotion.

### ANOVA

Using the classification method suggested by Vivona (2000), responses to the IPPA-R were grouped by attachment styles. The researcher divided responses for each subscale of the IPPA-R into thirds and assigned a value of low, medium, or high to each third. If responses were high in Trust subscale, and low in Alienation subscale they were considered Secure. "The avoidant style was assigned if Trust and Communication were both low and Alienation was at

least medium, or if Communication was low, Trust was medium, and Alienation was high,” unless Trust was lower than Communication; “the [anxious/]ambivalent style was designated if Communication and Alienation were at least medium, Communication was higher than Trust, and Alienation was not lower than Trust” (p. 318). Forty of the total IPPA-R responses were classified using this technique returning 14 Secure attachments, 7 Anxious/Ambivalent attachments, and 19 Avoidant attachments. The number of avoidant classifications, 47.5% of responses, is higher than the researcher expected, or the percentage, 39%, found by Vivona (2000) using the same classification. Vivona’s participants were undergraduate students and a majority, 83%, non-Hispanic white. Results suggested significant differences between groups and score on the Locomotion scale ( $F(2,37) = 11.262, p < .001$ ), but no significant difference on the Assessment scale ( $F(2,37) = 1.776, p < .183$ ). Results from a post hoc Tukey HSD test comparing group membership to Locomotion are presented in *Table 3*. Findings suggest that individuals classified as securely attached score higher in locomotion than the other two attachment styles. There was not a statistically significant difference between anxious/ambivalent and avoidant attachments as related to locomotion. ANOVA Test on the attachment groups on Assessment yielded no significant mean difference.

Figure 3

Dependent Variable	Attachment Style (I)	Attachment Style (J)	Mean Difference (I-J)	Standard Error	Significance
tLAS - Locomotion	Secure	Anxious/Ambivalent	10.285714*	3.417746	0.013
		Avoidant	12.007519*	2.600515	0.000
	Avoidant	Anxious/Ambivalent	-1.721805	3.264405	0.858

Note. \*The mean difference is significant at the 0.05 level.

### Multiple Regression

Finally, a multiple regression was performed to assess the extent to which the security of teacher attachment explained student motivation beyond that of secure attachment to primary caregiver. Since the collinearity of the IPPA-R and the CATSB was reasonably low ( $R = .522, p < .01$ ), multiple regression was appropriate. Originally, sex and racial/ethnic differences were run at level one of the regression, but as there was not a significant regression equation ( $F(2, 42) = .021, p = .979$ ) these variables were removed from the analysis. The test was rerun with IPPA-R at level one, and CATSB at level two. A significant regression equation was found for parent attachment ( $F(1, 42) = 13.613, p = .001$ ) with an  $R^2 = .233$ . At the second level, the CATSB was tested with a  $\Delta R^2 = .049$  ( $p = .098$ ), suggesting that secure teacher attachment has a small but insignificant effect on student Locomotion above that of attachment to primary caregiver. Multiple regression was not performed for Parent and Teacher attachment on Assessment as bivariate correlations were not significant.

Since no significant relationship was found between any scales or subscale, besides the Alienation subscale of the IPPA-R on Assessment, a final multiple regression was executed to calculate the extent to which Alienation explained student Assessment beyond all other subscales of the IPPA-R and the CATSB. As with previous regressions no significant regression equation was found between Sex, Race/Ethnicity and the tLAS; it was removed from the first level of regression analysis. Trust and Communication subscales of the IPPA-R and the Availability/Acceptance and Rejection subscales of the CATSB were placed at the first level. No significant regression equation was found for a combination of all subscales ( $F(4, 40) = 1.148, p < .348$ ), with an adjusted  $R^2 = .103$ . At the second level the Alienation subscale was calculated with a significant regression equation,  $F(5, 39) = 2.552, p = .043$ , and a  $\Delta R^2 = .144$ . This final

analysis suggests that Alienation from primary caregiver is the only scale accountable for variance on student's Assessment.

### **Discussion**

The goal of this study was to explore the relationship between students' attachment to a primary caregiver and their senior government teacher to their motivation as measured through Locomotion and Assessment. The two research questions for this study were oriented around examining the relationship between parent attachment and teacher attachment to students' motivation. The first research question, relationship between attachment to parent and motivation, suggests, there is a significant relationship between students' attachment to their primary caregiver to their Locomotion. A group difference was found between high and low secure attached students, where high attached students reported higher Locomotion as compared to the low group. ANOVA confirmed that of the three attachment groups, secure attachments reported higher Locomotion than either of the insecure groups. Additionally, regression found significant correlation between parent attachment security and Locomotion. This reflects the ideas presented by Ainsworth (1979), which proposed individuals use their attachment relationships to explore their environment.

High school students who are increasingly securely attached to their primary caregiver are likely to demonstrate an increased ability to make significant steps toward completing a goal than their less attached peers. Students with secure attachment to parents feel increasingly free to begin an action or goal directed behavior, without the need for over assessment or comparison of the requirements of goal attainment. Educators should take note of this and rely on students' relationships with peers, parents, and teachers to decrease procrastination and improve school wide exploration. Orehek et al., (2017) suggests that individuals can display different self-

regulation tendencies between various attachment figures; as such creating a network of secure attachments which a student might utilize as a secure base could increase locomotion and decrease over assessment. Alienation subscale is positively correlated to students' assessment, which also suggests that those students who feel alienated from their primary caregiver are more likely to over evaluate or compare the quality current or future states, and what it might take to get from one to the other, than those who do not feel alienated. This confirms Orehek et al. (2017), who found that anxious/ambivalent attachment is a predictor of higher assessment.

The second research question examining the relationship between teacher attachment and motivation was tested along the null hypothesis. While bivariate analysis revealed a correlation between teacher attachment and student locomotion, when attachment to primary caregiver was factored, almost no relationship was observed. Along with bivariate, this suggests between the two, at least within the study's participants, that attachment to primary caregiver is significantly related to teacher attachment. T-Tests performed among high and low teacher attachment scores suggest, however, that there is no significant relationship observed between either group and Locomotion or Assessment. While the current study was not able to reject the null hypothesis for the second research question, a larger and more robust data set, inclusive of honors and Advanced Placement students as participants, could lead to more meaningful results. Students who were not securely attached to the participating teacher in this study could be securely attached to other teacher(s) in their high school. Examining additional student teacher relationships could lend different results.

Teachers, using attachment theory, could develop behaviors which encourage secure attachments or encourage student exploration, such as effective communication, classroom instruction, and teacher attention (O'Connor, & McCartney 2007). The lack of positive or

negative collinearity between the CATSB and student locomotion and assessment suggest that there is room for growth in these relationships. Implementing classroom management as a tool to enforce behaviors that reinforce or encourage secure attachment development can help improve student self-regulation. Classroom culture should be built by the teacher to include the encouragement of sharing, respect for common property, pride in work, and smooth transitions. Strategies for developing into an effective secure base from student might explore the secondary classroom are increased autonomy and instructional support (Verschuere & Koomen, 2012).

Teachers can implement strategies which build student self-regulations: record keeping, in-depth review, increased information gathering, goal setting (Learner & Kruger, 1997), and finding multiple solutions to a single problem. Learner and Kruger suggest a reason for low motivation is the inability or awareness in cultivation of adult relationships to support academic endeavors. The researchers suggest implementation of intervention programs specifically designed to meet academic goals and build these relationships. Some high and middle schools have implemented an advisory class in which each teacher is paired with a small number of students to ensure those students have a more individualized relationship. The use of this type of class could increase the perceived utility and accessibility of adult relationships within the educational setting.

As locomotion is tied to mobility, the findings are similar to that of Duchesne and Larose (2007) in which they found that students are “more willing to explore their school environment” (p. 1514) when they have higher attachment to their parents. The relationship between parent attachment and students’ locomotion provides teachers and schools more reason to involve parents in the educational process. Because of the strong relationship between student locomotion and their attachment to their parents utilizing this relationship could allow schools

and teachers to provide more rigorous instruction, which encourages students to meet mastery goals rather than performance goals.

Kruglanski et al. (2000) found that individuals higher in Locomotion are more likely to care about mastery goals rather than performance goals. As modern education moves away from rote memorization and towards critical thinking skills, students with high locomotion need to be aware that the goal of education is mastery and not the grade on their report card. Students higher in Assessment tend to care more about performance (2000); for these students it may be beneficial to identify how students might work on reframing their regulatory mode towards mastery. This is not to say that Assessment is not necessary, but over Assessment places value on “proving that one can meet some tangible standard for success and, especially, proving that one can do well compared with others” (Kruglanski et al., 2000, p. 803). Informing parents of the effects their responsiveness to their children’s attachment needs, and instructing them how to be responsive, might impact their children’s future motivation which could increase that child’s mastery.

The present research is a valuable addition to the larger body of research dedicated to parent attachment; as the link between parent attachment and various aspects of an individual’s life extend, its importance will continue to grow. This research helps teachers understand the motivational framework students bring into the classroom on a continual basis. Students do not enter school as a *tabula rasa*, blank slate, but with an established internal working model which we are tasked to mold into a productive, functioning citizen. The evolution of a more complete picture of how students’ internal working models develop might provide educators insight to better aid students in the acquisition of the goal of education: socialization and the creation of an active, informed and engaged citizenry. Teachers should examine these finds, and those of other



researchers, to develop classroom environments that are supportive, model secure attachment behaviors, and are responsive to the individual needs of students.

### **Limitations**

A major limitation to the study is the number of participants. Originally, an entire senior class from the participating high school was expected as respondents. This number was severely reduced due to the timing of teacher walkouts and Advanced Placement (AP) testing; both causing a delay in the delivery of scales to student participants, and the latter causing students not to complete the scales as they were studying for their exams. It is possible that AP students, seeing the benefit of AP programs, have higher Locomotion and are better Assessors than those students not a part of the program. This would corroborate Kruglanski et al. (2000) in their findings that those better in Assessment would choose goals with higher attainment value, and high locomotor scores are related to speed of goal attainment. The above could explain why there is little correlation between the CATSB and the IPPA-R and Assessment. Further research would need to be done to distinguish the Regulatory Mode of AP students versus on level students.

Multiple regression is a beneficial tool in understanding relationships between variables; those relationships are not causal. Additionally, while both the IPPA-R and the CATSB are significantly correlated to the Locomotion subscale of the tLas, there is a measurable correlation between the two as well. This limits strength of multiple regression in making predictions about student Locomotion. A significant limitation to studying attachment in the high school setting is the limited amount of time that secondary teachers spend with students. This reduction in interaction time as compared to primary education will likely have an effect on the link between attachment and academic outcomes. However, the findings from this study adds to the body of knowledge in regard to student-teacher relationships.

### **Suggestions for Future Research**

Future research should examine attachment within the secondary setting and examine academic outcomes, such as achievement, mastery versus performance, and social competency. Additionally, researchers should investigate school wide attachment network to including teachers, administration, coaches, peers, and parents. The present research and research cited examined only teacher and parent attachment relationships as predictor variables, future research might examine multiple variables to gain a better understanding of the predictors of student motivation to create a clearer picture of the ways multiple student relationships impacts students' internal working models. Within this research it would be important to gather data on students' descriptions of these relationships to see if the relationship is an attachment bond; this would help researchers and educators explain the typical characteristics of a secure attachment between students and teachers and peers.

Additional research could increase the number of participants to increase the power of the predictability in attachment and various academic achievement variables. It may also be beneficial to determine the point at which, if at all, the strength of attachment to teacher begins to weaken as a student moves from primary into secondary school.

## References

- Ainsworth, M. D. S. (1979). Infant — mother attachment. *American Psychologist*, *34*(10), 932–937.
- Ainsworth, M. D. S. (1989). Attachments beyond infancy. *American Psychologist*, *44*(4), 709–716.
- Al-yagon, M., & Mikulincer, M. (2003). Children’s appraisal of teacher as a secure base and their socio-emotional and academic adjustment in middle school. *Research in Education*, *75*, 1–18.
- Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, *16*(5), 427–454.
- Barry, R. A., Lakey, B., & Orehek, E. (2007). Links among attachment dimensions, affect, the self, and perceived support for broadly generalized attachment styles and specific bonds. *Personality and Social Psychology Bulletin*, *33*(3), 340–353.
- Bernier, A., Beauchamp, M. H., Carlson, S. M., & Lalonde, G. (2015). A secure base from which to regulate: Attachment security in toddlerhood as a predictor of executive functioning at school entry. *Developmental Psychology*, *51*(9), 1177–1189.
- Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation: Anxiety and anger*. New York: Basic Books.
- Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss: Sadness and depression*. New York: Basic Books.

- Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). *Assessing internal working models of the attachment relationship*. In M.T. Greenberg, D. Cicchetti, & E.M. Cummings (Eds.), *Attachment in the preschool years*, pp.273-308. Chicago: Chicago University Press.
- Carlson, E. A. (1998). A prospective longitudinal study of attachment disorganization/disorientation. *Child Development*, 69, 1107–1128.
- Cassidy, J. (1999). The nature of the child's ties. In Cassidy, J., and Shaver, P. R. (eds.), *Handbook of Attachment: Theory, Research and Clinical Applications*. The Guilford Press, New York, pp. 3–20.
- Cugmas, Z. (2007). Child's attachment to his/her mother, father and kindergarten teacher. *Early Child Development and Care*, 177(4), 349–368.
- D'Arrisso, A. D. (2010). *Academic achievement in First Nation adolescents: The role of parental and peer attachment in promoting successful outcomes*. McGill University.
- Danielsen, A. G., Wiium, N., Wilhelmsen, B. U., & Wold, B. (2010). Perceived support provided by teachers and classmates and students' self-reported academic initiative. *Journal of School Psychology*, 48(3), 247–267.
- De Laet, S., Colpin, H., Goossens, L., Leeuwen, K. Van, & Verschueren, K. (2014). Comparing parent–child and teacher–child relationships in early adolescence: Measurement invariance of perceived attachment-related dimensions. *Journal of Psychoeducational Assessment*, 32(6), 521–532.
- Duchesne, S., & Larose, S. (2007). Adolescent parental attachment and academic motivation and performance in early adolescence. *Journal of Applied Social Psychology*, 37(7), 1501–1521.

- Duschinsky, R. (2015). The emergence of the disorganized/disorientated (D) attachment classification, 1979–1982. *History of Psychology, 18*(1), 32–46.
- Dutra, L., Bureau, J. F., Holmes, B., Lyubchik, A., & Lyons-Ruth, K. (2009). Quality of early care and childhood trauma: A prospective study of developmental pathways to dissociation. *Journal of Nervous and Mental Disease, 197*, 383–390.
- George, C., & Main, M. (1979). Social interactions of young abused children: Approach, avoidance, and aggression. *Child Development, 50*, 306–318.
- Gore, J. S., & Rogers, M. J. (2010). Why do I study? The moderating effect of attachment style on academic motivation. *The Journal of Social Psychology, 150*(5), 560–578.
- Gullone, E., & Robinson, K. (2005). The Inventory of Parent and Peer Attachment - Revised (IPPA-R) for children: A psychometric investigation. *Clinical Psychology and Psychotherapy, 12*(1), 67–79.
- Higgins, E. T., Kruglanski, A. W., & Pierro, A. (2003). Regulatory Mode: Locomotion and Assessment as Distinct Orientations. *Advances in Experimental Social Psychology, 35*, 293–344.
- Hinde, R. A. (1997). *Relationships: A Dialectical Perspective*. New York: Psychology Press.
- Howes, C., Rodning, C., Galluzzo, D. C., & Myers, L. (1988). Attachment and child care: Relationships with mother and caregiver. *Early Childhood Research Quarterly, 3*(4), 403–416.
- Hughes, J. N. (2011). Longitudinal effects of teacher and student perceptions of teacher-student relationships qualities on academic adjustment. *The Elementary School Journal, 112*(1), 38–60.

- Johnson, B. (2008). Teacher student relationships which promote resilience at school: a micro-level analysis of students' views. *British Journal of Guidance & Counselling*, 36(4), 385–399.
- Kruglanski, A. W., Higgins, E. T., Pierro, A., Thompson, E. P., Atash, M. N., Shah, J. Y., & Spiegel, S. (2000). To “do the right thing” or to “just do it”: Locomotion and assessment as distinct self-regulatory imperatives. *Journal of Personality and Social Psychology*, 79(5), 793–815.
- Lerner, D. G., & Kruger, L. J. (1997). Attachment, self-concept, and academic motivation in high-school students. *American Journal of Orthopsychiatry*, 67(3), 485–492.
- Lewis, M., & Feiring, C. (1989). Infant, mother, and mother-infant interaction behavior and subsequent attachment. *Child Development*, 60(4), 831–837.
- Main, M., & Solomon, J. (1986). Discovery of a new, insecure-disorganized/disoriented attachment pattern. In M. Yogman & T. B. Brazelton (Eds.), *Affective development in infancy* (pp. 95–124). Norwood, NJ: Ablex.
- Maulana, R., Opdenakker, M., & Bosker, R. (2013). Teacher–student interpersonal relationships do change and affect academic motivation: A multilevel growth curve modelling. *British Journal of Educational Psychology*, 84, 459–482.
- Mikulincer, M., & Selinger, M. (2001). The interplay between attachment and affiliation systems in adolescents' same-sex friendships: The role of attachment style. *Journal of Social and Personal Relationships*, 18(1), 81–106.
- Mitchell-Copeland, J. R. (1996). *Child-teacher attachment and social competence*. Retrieved from Ovid Technologies Database.

- Murdock, T. B., & Miller, A. (2003). Teachers as sources of middle school students' motivational identity: Variable-centered and person-centered analytic approaches. *Elementary School Journal, 103*(4), 383–399.
- O'Connor, E. O., & McCartney, K. (2007). Examining teacher-child relationships and achievement as part of an ecological model of development. *American Educational Research Journal, 44*(2), 340–369.
- Orehek, E., Vazeou-Nieuwenhuis, A., Quick, E., & Weaverling, G. C. (2017). Attachment and Self-Regulation. *Personality and Social Psychology Bulletin, 43*(3), 365–380.
- Pianta, R. C., Hamre, B., & Stuhlman, M. (2003). Relationships between teachers and children. In *Handbook of Psychology Volume 7 Educational Psychology* (pp. 199–234).
- Pierro, A., Giacomantonio, M., Kruglanski, A. W., & Higgins, E. T. (2011). On the psychology of time in action: Regulatory mode orientations and procrastination. *Journal of Personality and Social Psychology, 101*(6), 1317–1331.
- Pintrich, P.R., & DeGroot, E.V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*, 33-40.
- Roorda, D. L. (2011). The influence of affective teacher-student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research, 81*, 493–529.
- Sierra, P. G. (2017). Attachment and preschool teacher: An opportunity to develop a secure base. *International Journal of Early Childhood Special Education, 4*(1), 1–16.

- Suchodoletz, A. Von, Gestsdottir, S., Wanless, S. B., McClelland, M. M., Birgisdottir, F., Gunzenhauser, C., & Ragnarsdottir, H. (2013). Behavioral self-regulation and relations to emergent academic skills among children in Germany and Iceland. *Early Childhood Research Quarterly, 28*(1), 62–73.
- Tabachnick, B. G., & Fidell, L. S. (2007) *Using multivariate statistics*. Boston, MA: Pearson Education, Inc.
- Trinke, S. J., & Bartholomew, K. (1997). Hierarchies of attachment relationships in young adulthood. *Journal of Social and Personal Relationships, 14*(5), 603–625.
- van Ijzendoorn, M. H., Sagi, A., & Lambermon, M. W. E. (1992). The multiple caretaker paradox: Data from Holland and Israel. *New Directions for Child and Adolescent Development, 1992*(57), 5–24.
- Verschueren, K., & Koomen, H. M. Y. (2012). Teacher–child relationships from an attachment perspective. *Attachment & Human Development, 14*(3), 205–211.
- Vivona, J. M. (2000). Parental attachment styles of late adolescents: Qualities of attachment relationships and consequences for adjustment. *Journal of Counseling Psychology, 47*(3), 316–329.
- Wacha, V. H. (2010). *Attachment patterns relationship to intelligence and academic achievement in school-age children*. University of Arizona.
- Weiss, K. R. (1998). A taxonomy of relationships. *Journal of Social and Personal Relationships, 15*(5), 671–683.
- Wentzel, K. R. (1997). Student motivation in middle school: The role of perceived pedagogical caring. *Journal of Educational Psychology, 89*(3), 411–419.



West, K. K., Mathews, B. L., & Kerns, K. A. (2013). Mother – child attachment and cognitive performance in middle childhood: An examination of mediating mechanisms. *Early Childhood Research Quarterly, 28*, 259–270.

Wong, E. H., Wiest, D. J., & Cusick, L. B. (2002). Perceptions of autonomy support, parent attachment, competence and self-worth as predictors of motivational orientation and academic achievement: An examination of sixth- and ninth-grade regular education students. *Adolescence, 27*(146), 225.

## Appendix A

### Children's Appraisal of Teacher as a Secure Base scale (CATSB)

INSTRUCTIONS: The following items ask you to assess your relationship with your senior government teacher.

1. My teacher makes me feel welcome in the class.
2. My teacher trusts me.
3. My teacher makes me feel that what I do is important.
4. My teacher is always there to help me when I need her.
5. My teacher always gives me a lot of attention.
6. My teacher makes me feel unneeded in the class. \*
7. My teacher makes me feel unwanted. \*
8. My teacher tends to complain about me to other adults (for instance: parents, teachers, principal). \*
9. My teacher is aware of my good qualities.
10. When I am worried or sad my teacher helps me feel better.
11. My teacher is embarrassed that I am her student. \*
12. My teacher believes in my abilities.
13. My teacher is pleased with my behavior.
14. My teacher praises my abilities in front of other people.
15. My teacher would prefer me to be someone else. \*
16. My teacher makes me feel I am an asset to my class.
17. My teacher believes that I mean to make an effort.
18. My teacher makes me feel as though I do not exist. \*
19. My teacher does not appreciate what I do. \*
20. My teacher keeps me at a distance. \*
21. My teacher expresses her appreciation of me even when I try but fail.
22. My teacher praises me when she is pleased with me.
23. I feel free to talk with my teacher.
24. My teacher praises me when I do a good job.
25. My teacher tries to get me to be closer to her.

\*These items are reverse-scored.

## Appendix B

### **Inventory of Parent and Peer Attachment**

**INSTRUCTIONS:** The next set of questions asks about your relationships with a primary caregiver. Each of the following statements asks about your feelings about your primary caregiver, or the caregiver to which you are the closest (e.g. mother, father, foster/adoptive parent, aunt/uncle, grandparent).

1. My primary caregiver respects my feelings.
2. I feel my primary caregiver does a good job as my primary caregiver.
3. I wish I had a different primary caregiver. \*
4. My primary caregiver accepts me as I am.
5. I like to get my primary caregiver's point of view on things I'm concerned about.
6. I feel it's no use letting my feelings show around my primary caregiver. \*
7. My primary caregiver can tell when I'm upset about something.
8. Talking over my problems with my primary caregiver makes me feel ashamed or foolish. \*
9. My primary caregiver expects too much from me. \*
10. I get upset easily around my primary caregiver. \*
11. I get upset a lot more than my primary caregiver knows about. \*
12. When we discuss things, my primary caregiver care about my point of view.
13. My primary caregiver trusts my judgment.
14. My primary caregiver has his/her own problems, so I don't bother his/her with mine. \*
15. My primary caregiver helps me understand myself better.
16. I tell my primary caregiver about my problems and troubles.
17. I feel angry with my primary caregiver. \*
18. I don't get much attention from my primary caregiver. \*
19. My primary caregiver helps me talk about my difficulties.
20. My primary caregiver understands me.
21. When I am angry about something, my primary caregiver tries to be understanding.
22. I trust my primary caregiver.
23. My primary caregiver doesn't understand what I'm going through these days. \*
24. I can count on my primary caregiver when I need to get something off my chest.
25. If my primary caregiver knows something is bothering me he/she asks me about it.

\*These items are reverse-scored when scoring the Trust and Communication subscales.

## Appendix C

### The Locomotion and Assessment Scale

#### Locomotion Subscale.

INSTRUCTIONS: Read each of the following statements and decide how much you agree with each according to your beliefs and experiences.

1. I don't mind doing things even if they involve extra effort.
2. I am a "workaholic".
3. I feel excited just before I am about to reach a goal.
4. I enjoy actively doing things, more than just watching and observing.
5. I am a "doer".
6. When I finish one project, I often wait awhile before getting started on a new one. \*
7. When I decide to do something, I can't wait to get started.
8. By the time I accomplish a task, I already have the next one in mind.
9. I am a "low energy" person. \*
10. Most of the time my thoughts are occupied with the task I wish to accomplish.
11. When I get started on something, I usually persevere until I finish it.
12. I am a "go-getter".

#### Assessment Subscale.

INSTRUCTIONS: Read each of the following statements and decide how much you agree with each according to your beliefs and experiences.

1. I never evaluate my social interactions with others after they occur. \*
2. I spend a great deal of time taking inventory of my positive and negative characteristics.
3. I like evaluating other people's plans.
4. I often compare myself with other people.
5. I don't spend much time thinking about ways others could improve themselves. \*
6. I often critique work done by myself or others.
7. I often feel that I am being evaluated by others.
8. I am a critical person.
9. I am very self-critical and self-conscious about what I am saying.
10. I often think that other people's choices and decisions are wrong.
11. I rarely analyze the conversations I have had with others after they occur. \*
12. When I meet a new person I usually evaluate how well he or she is doing on various dimensions (e.g., looks, achievements, social status, clothes).

\*These items are reversed-scored.

#### Faking Items (Unscored).

1. I have never been late for an appointment or work.
2. I have never known someone I did not like.
3. I believe that one should never engage in leisure activities.
4. I feel that there is no such thing as an honest mistake.

5. I have never hurt another person's feelings.