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REVIEW ARTICLE

Attachment in the Classroom

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Abstract Attachment influences students' school success. This is true of students' attachment to their parents, as well as to their teachers. Secure attachment is associated with higher grades and standardized test scores compared to insecure attachment. Secure attachment is also associated with greater emotional regulation, social competence, and willingness to take on challenges, and with lower levels of ADHD and delinquency, each of which in turn is associated with higher achievement. These effects tend to be stronger for high-risk students. In this era of accountability, enhancing teacher–student relationships is not merely an add-on, but rather is fundamental to raising achievement. Understanding the role of attachment in the classroom will help educators be more effective, particularly with challenging students. Twelve suggestions to improve teacher–student relationships and school bonding are provided.

Keywords Attachment · Achievement · School bonding · Teacher–student relationship

Children's socioemotional well-being is critical to school success, and attachment is the foundation of socioemotional well-being. Because of this, educators—from preschool to high school—can be more effective if they understand how attachment influences their students. Attachment influences school success through two routes: indirectly through attachment to parents, and directly through attachment to teachers and schools. In this article, we briefly review basic attachment concepts for readers who are not familiar with attachment research. We then show how attachment to parents is linked to school success, and we summarize the limited research on attachment-like relationships with teachers. Finally, we discuss school bonding and conclude with recommendations for educators.

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Basic Attachment Concepts

Attachment is a deep and enduring affectionate bond that connects one person to another across time and space (Ainsworth 1973; Bowlby 1969). It is *not* synonymous with dependency; instead, secure attachment *liberates* children to explore their world. Attachment is also *not* synonymous with general sociability. Both outgoing and shy children can be securely attached.

Attachment relationships are characterized by specific behaviors in children, like showing preference for or retreating to the attachment figure when threatened or upset, and using the attachment figure as a secure base while exploring their world. Specific attachment behaviors in adults include attending to the needs of the child, responding to the child's signals, and looking toward the child. Attachment behaviors show remarkable similarity across varied cultures. Most children direct attachment behavior toward more than one preferred person. However, children are highly selective about attachment figures, and so are likely to be attached to just a few (Ainsworth 1979). Usually children are attached to family (e.g., mother, father, and siblings), but they may also be attached to non-family (e.g., teachers or childcare providers).

Attachment has at least two functions pertinent to classrooms. (1) Attachment provides feelings of security, so that children can explore freely. While all children seek to feel secure, attachment helps them balance this need with their innate motivation to explore their environment. (2) Attachment forms the basis for socializing children. As children and adults are drawn together and interact harmoniously, children adopt the adults' behavior and values.

Attachment is important across childhood, not just in toddlerhood. Toddlers' attachment is obvious when they protest separation from their primary attachment figures (AFs). Older children may tolerate separation from their AF and may explore more widely because they do not need constant physical proximity to their AFs. However, they still need to feel secure. In middle childhood and adolescence, AFs' availability remains important. Availability refers to physical presence, openness to communication, responsiveness to the child's requests for help, and awareness of the child's needs. Adolescence is a time of establishing autonomy and some independence from the family. Because some people confuse attachment with dependency, they mistakenly assume that attachment must wane during adolescence. Instead, self-reliance and independence are the result of feeling secure (Bretherton and Munholland 1999). A bedrock of healthy personality in adolescence is a belief in the availability of AFs.

Individual differences in attachment security

All children who are biologically normal attach to adults who take care of them, but the *quality* of attachment varies. Psychologists have identified four types of attachment using a variety of measures, such as the Strange Situation Procedure (Ainsworth *et al.* 1978) and the Adult Attachment Interview (Bretherton and Munholland 1999).

Secure

Secure children take an interest in novel surroundings when the AF is present. As toddlers they show a clear preference for the AF over others. If distressed, they readily go to the AF, are quickly soothed, and return rapidly to exploration. They show delight toward the AF (Ainsworth 1979). As older children they have a positive, open, engaged style of interaction with the AF (Behrens *et al.* 2007). They seek out the AF to help them cope with distress, and explore freely when they feel safe (Main and Cassidy 1988; Stevenson-Hinde and

Verschueren 2002). As teens they engage in productive problem-solving that allows them to preserve the relationship while asserting autonomy during disagreements with the AF (Allen and Land 1999; Allen *et al.* 2003).

What factors might lead to secure attachment? The AF's sensitivity to the child is a core antecedent. A sensitive caregiver attends to the child's signals, accurately interprets those signals, understands the child's perspective, and responds promptly and appropriately to the child's needs. For an infant, AFs might respond promptly and reliably to crying. For an older child, AFs might encourage, give assistance, instruct, or reassure the child during difficult tasks, and show interest in the child's activities (Crittenden 1992; Pianta *et al.* 1989).

Other AF behaviors contribute to secure attachment as well (De Wolff and van IJzendoorn 1997; Pederson *et al.* 1998). These include high-quality communication that is open, direct, coherent, and fluent in attachment-related situations. AFs with secure children use warm, positive statements to direct their children and are less controlling, use less corporal punishment, and report more positive moods and enjoyment of their children than AFs with insecure children (Stevenson-Hinde and Verschueren 2002). AFs are accessible, cooperative, and accepting of their children. This constellation of behaviors is sometimes referred to as attunement, mutuality, synchrony, or insightfulness. Sensitive AFs and secure children respond to one another contingently, much as you would see in a well-synchronized dance. Insightful AFs consider the child's motives and feelings, and take into consideration the child's perspective in a child-focused way (Koren-Karie *et al.* 2002). High school students whose AFs are attuned to them are more likely to be securely attached than those whose AFs are not attuned (Allen *et al.* 2003).

Insecure/avoidant

Insecure/avoidant children appear very independent of their AF and display no clear preference for the AF. As toddlers they may turn away from the AF, appear deaf to the AF's call, lean out of the AF's arms, and keep their backs to the AF. As older children they do not seek contact when distressed, or communicate distress or vulnerability, and they avoid becoming emotionally close. They physically and emotionally avoid the AF (Behrens *et al.* 2007). As teens they may deny the personal impact of parent–child relationships, and may communicate dysfunctional levels of anger, but are also likely to avoid such discussions (Allen and Land 1999; Crittenden 1992; Hodges *et al.* 1999; Main and Cassidy 1988; Stevenson-Hinde and Verschueren 2002).

Children's avoidant behavior makes sense because their AFs tend to be insensitive, intrusive, angry, and rejecting (Ainsworth 1979; Crittenden 1992). The AF may withdraw from helping the children with difficult tasks (Stevenson-Hinde and Verschueren 2002). The AF has been frequently unavailable when the children were in emotional turmoil. The children are left with conflict between their biological drive to contact the AF and anger toward the AF. Avoidant behavior is a defense against anger. The children suppress their negative emotions in the presence of the non-supportive AF, so that the AF will not reject or separate from them. This keeps the AF near in case they really need help (Ainsworth 1979). Thus, avoidant children exhibit cool indifference in order to maintain proximity with an adult who rebuffs them.

Insecure/resistant

Insecure/resistant children fail to derive feelings of security from the AF. As toddlers they have difficulty moving away from the AF to explore novel settings. They may show

exaggerated emotions and are difficult to soothe. They seek contact, but do not appear to be comforted by it. They may be passive, whiney, fussy, helpless, or immature, or they may be angry, petulant, and resistant toward the AF. As older children they may also be demanding of and preoccupied with the AF (Behrens *et al.* 2007; Main 1999; Main and Cassidy 1988; Stevenson-Hinde and Verschueren 2002). They may appear hyperactive as they drift from object to object. As teens they may express a strong need for their AF in stressful situations, have trouble separating, have excessive concern about the AF's whereabouts, and have difficulty recovering from upset (Hodges *et al.* 1999). They may be angry with their AFs even while attempting to try to please them (Hesse 1999).

Resistant children may be responding to low levels of sensitivity in their AFs, who are unresponsive to all but the strongest signals from their children. AFs may seem dependent on the approval of their children. They may have difficulty allowing their children to direct their own play, often squabbling with children as though there were two children instead of an adult and child (Crittenden 1992). AFs often report feeling depressed, anxious, and dissatisfied with their marriages and home interactions (Stevenson-Hinde and Verschueren 2002). Their children are unsure of the AF's ability or willingness to respond to them, but do not fear rejection. As a result, they may coerce the AF into constant availability by using angry threats, tantrums, pouting, sullenness, or other exaggerated displays of emotions or helplessness. Resistant children's clingy, dependent behavior elicits caregiving from an AF who is inconsistently or inadequately responsive.

Insecure/disorganized-disoriented

Insecure/disorganized-disoriented children lack an organized response to the AF. As toddlers their attachment behaviors are contradictory. For example, they might approach the door when they hear mother returning, but then run to the other side of the room. They appear apprehensive, and their stress behaviors may actually intensify when they approach their AF. These behaviors are often fleeting and subtle. As older children they may take charge to an unnatural degree in order to reduce uncertainty and may appear confident, yet brittle and anxious (Stevenson-Hinde and Verschueren 2002). They may take on the parent role by behaving in a solicitous way toward the AF, or by trying to punish or embarrass the AF (Behrens *et al.* 2007; Main and Cassidy 1988). Their play may be characterized by violence and helplessness (Lyons-Ruth and Jacobvitz 1999). As teens they cannot discuss attachment coherently, or may express unresolved loss (Lyons-Ruth and Jacobvitz 1999).

Disorganized children may be responding to their AF's incomprehensible or frightening behavior (Main 1999). Frightening behaviors include looming into the child's face, approaching the child in an aggressive way, exhibiting trance-like behavior, showing fearful facial expressions, and handling the child as though the child were an inanimate object. Frightening behaviors put children in an inescapable conflict because the person they are drawn to for reassurance and security is also frightening (Lyons-Ruth and Jacobvitz 1999). Not all AFs of disorganized children are frightening; some are simply extremely insensitive (Bernier and Meins 2008; Stevenson-Hinde and Verschueren 2002). AFs of disorganized children often have a history of abuse, drug use, depression, or loss such as death or divorce (E. A. Carlson 1998). They are more likely to live without a partner, be intrusive and insensitive, and be psychologically unavailable, neglectful, or physically abusive. Many maltreated children have disorganized attachment (V. Carlson *et al.* 1989).

Child factors can also contribute to security of attachment. Children's medical fragility or difficult temperament can make it more difficult for caregivers to develop secure attachment with them. However, children's temperament makes only a small contribution to

attachment security (Bokhorst *et al.* 2003; Vaughn and Bost 1999). Many "difficult" children become securely attached with sensitive parenting (Pauli-Pott *et al.* 2007; Vaughn and Bost 1999). Furthermore, randomized controlled experiments have found that interventions that improve parental sensitivity also improve attachment (Bakermans-Kranenburg *et al.* 2003). Together, such research suggests that parent behavior drives the security of the relationship more than child behavior. About 50–60% of children are secure, another 20–25% are avoidant, and another 10–15% are resistant. About 10–25% are disorganized, but as many as 60% may be disorganized in high-risk samples (C. A. Bergin and McCullough 2009; O'Connor and McCartney 2007; van IJzendoorn *et al.* 1992). Children's attachment type tends to be stable over time. However, when adults change in their responsiveness to children, security of attachment can change (Grossmann and Grossmann 1991; Howes *et al.* 1998b; Lewis *et al.* 2000; Weinfield *et al.* 2000).

Researchers disagree about whether these four types adequately describe the variation in attachment relationships (Fraley and Spieker 2003). Some research uses just two categories—secure vs. insecure—while other research uses a continuum of security in attachment. The research we will review in this article uses all of these typologies, but the most common is the 4-fold typology discussed above.

Decades of research have shown that security of attachment is linked to a remarkable array of child outcomes over long periods of time, including success at school. In general, disorganized children have the most negative outcomes, secure children have the best outcomes, and avoidant and resistant children are in-between. How might attachment affect child outcomes beyond the AF–child relationship? A widely accepted explanation is the development of *internal working models*, which are memories and expectations that children carry into new interactions with others, that influence whether children approach or avoid others, and that carry positive or hostile emotions (Bretherton and Munholland 1999). These models serve as filters for understanding current and future interactions, and help the child evaluate, predict, and choose behavior. They seem to become part of children's internal personality by about age three (S. C. Johnson *et al.* 2007; Schore 2000).

Important components of internal working models include the following: (1) a model of others as trustworthy, (2) a model of the self as valuable, and (3) a model of the self as effective when interacting with others. Secure children create a model that the AF can be relied on to provide protection, security, and comfort (e.g., "I can count on her to help me—she is available and will help me get my emotions under control"). This becomes an expectation for the responsiveness of others in general, that others are caring and trustworthy, and that the social world is a safe place (Ainsworth 1979; Bowlby 1973; Sroufe 1996). In contrast, children who have a working model of the AF as inaccessible or unresponsive feel anxious.

Attachment to Parents is Linked to School Success

Security of attachment predicts academic achievement. This effect occurs as early as toddlerhood for pre-academic skills. Insecure toddlers tend to have shorter attention spans and perform worse on cognitive tasks than secure toddlers (Frankel and Bates 1990; Main 1983; Moss and St-Laurent 2001). While reading with their mothers, insecure toddlers are less inclined to stay on their mother's lap and tend to be less attentive to the book. In contrast, secure toddlers tend to be more engaged during joint story-book reading (Bus and van IJzendoorn 1997). Secure preschoolers develop better reading or pre-reading skills and better attitudes toward reading than insecurely attached preschoolers (Bus *et al.* 1997; Bus and van IJzendoorn 1988a, b).

After they enter school, insecure children tend to have lower verbal ability, math ability, reading comprehension, and overall academic achievement, and exhibit less curiosity than securely attached children (Granot and Mayseless 2001; Jacobsen and Hofmann 1997; Pianta and Harbers 1996; Weinfield *et al.* 1999). For example, one study found that attachment to mother and father predicted teacher ratings of school adaptation—like academic skills and emotional well-being—for third, fifth, and sixth graders (Kerns *et al.* 2000). In another study, attachment to mother predicted scholastic skill, GPA, and scholastic attitude among Israeli sixth graders, above and beyond the effects of IQ and self-esteem. This effect occurred for both concurrent attachment as well as for attachment measured 10 years earlier in infancy (Aviezer *et al.* 2002).

Insecure attachment in high school may also predict lower achievement during the first year in college. One study found that insecure students, compared to secure students, were more poorly prepared for exams, did not concentrate as well, feared failure, sought less help from teachers, and gave less priority to studies (Larose *et al.* 2005).

Why might parent–child attachment predict academic achievement? Possible answers come from one of the most well-known longitudinal studies of attachment, begun in Minneapolis in the 1970s with low-SES families (Sroufe *et al.* 1983). Attachment was assessed at 12 and 18 months of age. A few years later, the children's preschool teachers rated insecure children as less curious, more dependent, less empathic, less compliant, lower in self-esteem, less emotionally positive, and less socially competent than secure children. Teachers interacted with insecure children less positively, and their peers liked them less.

At age 10, the same children were brought together for a 4-week summer camp (Shulman *et al.* 1994). During the camp, counselors again rated children who had been insecurely attached in infancy as less socially competent, less self-confident, less emotionally healthy, and more dependent compared with children with secure histories. They made fewer friends at camp and spent less time with friends. In addition, the insecure children were more likely to become friends with other insecure children. At age 15, the children attended a series of camp reunions (E. A. Carlson 1998). Again, infant attachment predicted social competence and independence. Psychopathology in teens was modestly predicted by insecure attachment in infancy.

Thus, the Minnesota study found that parent–child attachment was linked to several outcomes relevant to school success. These outcomes include (1) willingness to accept challenges and independence, (2) social competence, (3) emotion regulation, (4) ADHD behaviors, and (5) psychopathology and delinquency. These findings have been supported by later research, which we discuss next.

Accepting challenges and independence

In the Minnesota study, teachers rated insecure preschoolers as less persistent, enthusiastic, self-confident, and tolerant of frustration than secure children (Weinfield *et al.* 1999). At 15 years of age, they were more dependent. Similarly, in the Israeli study of sixth graders, teachers viewed insecure children as less able to work independently and cope with frustration or criticism (Aviezer *et al.* 2002).

Sroufe (1996) has argued that resistant attachment tends to result in children who are either easily frustrated, tense, and anxious, or dependent, passive, helpless, and preoccupied with the attachment figure. Avoidant attachment tends to result in children who are hostile or emotionally disconnected. This serves to keep people and feelings at a distance, which is sometimes mistakenly interpreted as "independence." However, in the classroom, avoidant children actually seek more contact with their teachers than secure children, although they

also are less likely to seek help when hurt or frustrated, and are more likely to be defiant. This elicits angry or controlling behavior from the teacher.

Social competence

Insecurely attached children are less likely to be socially competent throughout childhood than secure children. Insecure children tend to have poor quality friendships. For example, in one study, insecure 10 year olds had no good friends, or they reported having many friends but were unable to name one. They also reported being ridiculed or excluded by peers (Grossmann and Grossmann 1991). While being interviewed, they tended to ignore the interviewer or to be overly close, seeking physical contact.

Insecure children are also more likely than secure children to exhibit behavior problems. In one study, 71% of the cases of serious preschool aggression involved children with disorganized attachment histories (Lyons-Ruth *et al.* 1993). In another study, peers in fourth through eighth grade described insecure children as aggressive, argumentative, dishonest, disruptive, withdrawn, and anxious (Hodges *et al.* 1999). *Avoidant* and *disorganized* children are the most at risk for antisocial behavior in preschool and elementary school (Goldwyn *et al.* 2000; Granot and Mayseless 2001; Moss *et al.* 1998; NICHD Early Child Care Research Network 2006). Still, many avoidant or disorganized children are not markedly hostile. Thus, backward prediction is clearer than forward prediction.

Cross-sectional studies indicate that secure children have more harmonious and intimate friendships, are more empathic toward peers, are more well-liked by peers, and are preferred playmates in preschool through first grade. They are described as more socially competent by preschool and high school teachers, as well as by peers in high school (Allen *et al.* 1998, 2007; Clark and Ladd 2000; Cohn 1990; DeMulder *et al.* 2000; LaFreniere *et al.* 1992; Weinfield *et al.* 1999). Even in college, secure freshmen report feeling more validated and cared for (Grabill and Kerns 2000) and have a larger, high-quality social support network (Anders and Tucker 2000).

The link between parent–child attachment and children's social competence at school has been found from preschool to high school, and from low-risk to high-risk populations, although the effects may be strongest for low-income, minority children (Allen *et al.* 1998; Anan and Barnett 1999; Frankel and Bates 1990; Hodges *et al.* 1999; Troy and Sroufe 1987). Still, not all studies find an effect of attachment on peer social competence, and there is great variation in effect size. Pooling published studies, Schneider and colleagues (2001) concluded that there was an overall effect size of 0.20.

Social competence is foundational to academic achievement because schooling is a social endeavor. Across the school years, children who are prosocial tend to have higher grades and test scores than less prosocial children (Miles and Stipek 2006; Wentzel 1993). In contrast, antisocial and rejected children tend to have lower grades and test scores, more reading and learning disabilities, more attention and thought problems, and greater risk of dropping out (Bub *et al.* 2007; Buhs and Ladd 2001; Dishion *et al.* 1991; French and Conrad 2001; Horn and Packard 1985; Hymel *et al.* 2002; Ladd and Burgess 2001; Malecki and Elliot 2002; Trzesniewski *et al.* 2006; Wentzel 1993; Zettergren 2003). Antisocial children tend to spend less time on task in the classroom, exhibit poor academic skills, and complete less homework (Patterson *et al.* 1989). Antisocial children tend to have low achievement even when other risk factors such as low intelligence, single parent household, high absenteeism, unstimulating home environment, and low SES are statistically controlled (Masten *et al.* 2005; Prior *et al.* 1999; Wentzel 1993). Thus, attachment may affect children's achievement at least in part through social competence at school.

What might explain the link between attachment and social competence? One mechanism is modeling. Parents of secure children model warmth, sensitivity, and positive emotions. Children who live with such parents learn to get along better with teachers and peers than children with insensitive parents (Stright *et al.* 2008). A second mechanism is through emotion regulation.

Emotional regulation

Attachment is the foundation of emotion regulation (Sroufe 1996). Insecure children lack experience with successful emotion regulation. As early as 4 months of age, children with insensitive mothers are poorly regulated compared to children with sensitive mothers (Braungart-Reiker *et al.* 2001). Caregivers of *resistant* children wait until upset has escalated to high levels before soothing. This trains children to have a rapid rise of intense emotions, makes them increasingly more difficult to soothe, and results in children who readily feel threatened, frustrated, anxious, and helpless (Thompson 1991). They under-regulate their emotions.

Caregivers of *avoidant* children are unresponsive, emotionally unavailable, or hostile. This trains children to rigidly squelch emotions and not seek others' help, which limits their opportunity to learn more adaptive coping strategies (Cassidy 1994). They do not freely express emotions that make them vulnerable, they avoid emotional involvement with others, and they may become hostile, aggressive, and detached (Thompson *et al.* 1995). They over-regulate their emotions.

In contrast, secure children learn from their sensitive parents that when emotion is overwhelming, others are available to soothe them. They learn constructive coping strategies, feel comfortable communicating their emotions, are willing to take on emotionally challenging situations, and discuss "hot" topics without anger (Cassidy 1994; Kobak *et al.* 1993; Sroufe 1996). Secure children recover readily from distress without falling to pieces. Animal research shows that repeated experiences with a soothing caregiver alters brain circuitry, resulting in a brain that can appropriately dampen high arousal and regulate emotions (Cassidy 1994).

Emotion regulation, in turn, is foundational to the other important outcomes we have discussed thus far. For example, emotion regulation is foundational to accepting challenges at school. Because insecure children have fewer coping skills, they are unwilling to take on potentially frustrating tasks, less able to discuss emotional topics without anger, and respond negatively to novel situations at school (Kobak *et al.* 1993; Sroufe 1996).

Emotion regulation is also foundational to academic achievement. Insecure children may do poorly in school because they often feel anxiety, which interferes with learning (Gunnar *et al.* 1996; Hunsley 1987; Perry 1997). Learning is a result of engaging new, unfamiliar objects or information in a constructive way. Yet novelty causes emotional arousal. If the child does not have good emotion regulation, anxiety results and the child is not able to engage with novelty, or learn. Instead of attending to the goals that a teacher has set, anxious children attend to potential threats and their own safety. Children who are repeatedly exposed to anxiety early in life may be at risk for over-activation of the amygdala, which can lead to chronic problems with attention and thought (Blair 2001). Anxiety is also associated with compromised immune functioning and illness (Maier and Watkins 2000). Thus, anxious children may often be absent from school, which also interferes with achievement.

Finally, emotion regulation is foundational to social competence at school. Children who have poor emotion regulation are not as well-liked and are perceived as less socially

competent by both teachers and peers (Eisenberg *et al.* 1995, 1997; McDowell *et al.* 2000). This is probably because children with poor emotion regulation typically express more negative than positive emotions, which leads to aggression and less prosocial behavior (Arsenio *et al.* 2000; Denham *et al.* 1990, 2003; Talley and Bergin 1998). In contrast, the smiles of happy children invite others to join them, and help sustain social interaction (Sroufe *et al.* 1984). In one study, first to fourth graders who expressed more positive than negative emotions at school were rated by teachers as more popular and well-behaved (Jones *et al.* 2002).

Healthy relationships require trust, self-disclosure, and reciprocity, so that true feelings can be shared. Secure children are free to be emotionally expressive (Sroufe 1996). Secure parent–child pairs can discuss past misbehavior with more emotional openness than insecure parent–child pairs (Laible and Thompson 2000). Secure children can express anger or say, "I hate you" to a parent, and still be confident that the parent will continue to care about them. Insecure children cannot. Their parents may not be able to contain their own negative emotions and may over-react, or they may dismiss their children's feelings (e.g., "You can't hate me. I'm your mother"). In self-defense, the child must shut off negative emotions so they are not overwhelming. Unfortunately, the strategies children use to protect themselves in insecure relationships can be carried over to prevent healthy future relationships with peers and teachers at school. As a result, insecure children tend to show ambivalence and contradiction in their relationships, a false self, emotional disturbance (withdrawal or aggression), fearfulness, or hyper-vigilance. Some are indiscriminant in their friendliness and attention seeking, and have difficulty forming close relationships.

Attention deficits and hyperactivity

Anxious attachment is linked to ADHD. Insecure children are more likely to be diagnosed with ADHD, or have ADHD symptoms regardless of being diagnosed (Clarke *et al.* 2002; Egeland *et al.* 1993). For example, a study of 5 to 7 year olds with disorganized attachment found they had social and attention problems according to their teachers (Goldwyn *et al.* 2000). This is presumably because anxiety impairs ability to control attention, executive functions, memory, and problem-solving, and increases task-irrelevant thoughts (Fincham *et al.* 1989; Ialongo *et al.* 1994). In contrast, secure children tend to have longer attention spans and higher cognitive test scores (Frankel and Bates 1990; Main 1983; Moss and St-Laurent 2001).

The link between attachment security and ADHD symptoms may be due to its effect on emotion regulation and anxiety. It may also be due to parents' intrusiveness, which is a precursor to insecure attachment. Intrusiveness refers to parent behavior that directs the child's activity according to the parent's agenda without regard for the child's agenda. Parents' intrusiveness is associated with frustration, hyperactivity, and attention deficits in preschoolers, as well as academic and emotional problems in elementary children (Egeland *et al.* 1993). Parents' intrusiveness in infancy is linked with ADHD behaviors 6 to 8 years later (Sroufe 1989, 1996).

Psychopathology and delinquency

Insecure attachment is not considered pathology per se, but is a risk factor for mental illness. Although most avoidant or resistant children do not develop clinically identified mental illness, according to some research 25–50% of disorganized children display

significant problems by early elementary school (Lyons-Ruth and Jacobvitz 1999). In addition, compared to secure teens, insecure teens suffer greater rates of maladjustment, suicidal thoughts, depression, conduct disorders, substance abuse, and eating disorders (Allen and Land 1999; Hesse 1999; Lewis *et al.* 2000; Weinfield *et al.* 1999). Insecure attachment has also been linked to anxiety and social withdrawal (LaFreniere *et al.* 1992; Lyons-Ruth and Jacobvitz 1999; Rubin and Lollis 1988). Delinquency and psychopathology take a toll on individual students and their peers and diminish the learning environment.

In summary, security of attachment is linked to academic achievement from preschool through high school. This link may be the result of attachment's effect on many dimensions of children's functioning—such as ability to take on academically challenging tasks, work independently, pay attention, tolerate frustration, be happy, contain aggression, be liked by peers, and have high-quality friendships—each of which, in turn, is linked to academic achievement. Figure 1 displays a model of relations among these variables. There is research to support each link in this model, although the full model has not been empirically tested. We present it as a framework to help educators understand how parent–child attachment may predict children's academic achievement. Can this research be applied to children's relationships with teachers?

Attachment to Teachers is Linked to School Success

To be effective, teachers must connect with and care for children with warmth, respect, and trust. It may be easier for teachers to establish attachment relationships in preschool or primary classrooms where teachers spend more time with students than in secondary schools, and tend to a broader range of their needs. Indeed, most of the research on teacher–student attachment has occurred in early childhood settings, rather than in secondary schools. Nevertheless, even in secondary schools both teachers and students believe that good teachers establish trusting, close relationships with students (Beishuizzen *et al.* 2001). Thus, we will discuss research pertinent to secondary schools, but by necessity emphasize early childhood. Later, we will discuss research on school bonding, which emphasizes secondary schools.

A preschool typology of teacher–child attachment

Researchers assessed attachment to early childhood teachers for 3,062 predominantly poor, European American and African American preschoolers (Howes and Ritchie 1999). They

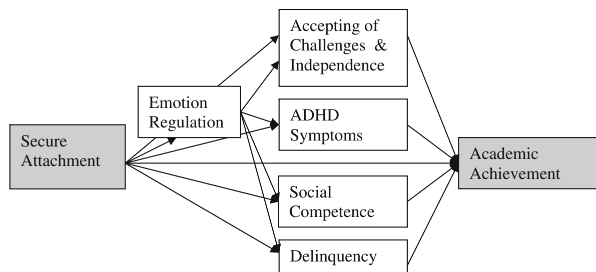

Fig. 1 Model showing links between secure attachment to parents and academic achievement. Each link is supported by a field of research

described four types of attachment to teachers that parallel the typology for parent–child attachment:

1. *Avoidant* children were more interested in classroom materials than in the teacher or other children. They did not approach the teacher, so the teacher easily lost track of them. When the teacher approached, they acted as if they did not hear or notice the teacher. If requested to come to the teacher, they did so, but quickly left. They did not call out to the teacher to show something. When hurt or upset they did not seek the teacher, or even moved away if the teacher tried to comfort them.
2. *Resistant* children were irritable and fussy with the teacher for no apparent reason. They often cried and were difficult to console. They resisted classroom routines like cleaning up. They clung to the teacher and cried if the teacher left the room. Every bump or scratch brought tears. They were easily frustrated by difficult tasks. They were demanding and impatient with the teacher and not satisfied with the teacher's attempts to respond to them.
3. *Secure* children accepted comfort if hurt or upset, molding their bodies to the teacher if held. They spontaneously hugged the teacher. They touched the teacher gently during play. They readily shared their activities with the teacher, showing things and welcoming entrance into play. They asked for help if they needed it. They read the teacher's face for information. They easily followed directives, and acted sorry if the teacher spoke firmly to them. They made transitions smoothly. They were glad to see the teacher at the beginning of the day.
4. *Near secure* children displayed moderate avoidant behaviors and some secure behaviors. They distrusted their teachers, but conformed readily to classroom procedures, such that teachers did not perceive a problem in their relationship. This category could be thought of as "attachment in the making."

In a study of impoverished, predominantly African American 4 year olds, the same behaviors that characterize a secure mother–child attachment were characteristic of secure teacher–student relationships, such as keeping track of the other, using the adult as a secure base from which to explore, being comforted and reassured by the adult's presence, and being attuned to the other's facial expressions and emotions (Pianta *et al.* 1997).

An elementary school typology of teacher–child relationships

In elementary school, Pianta and colleagues distinguish between secure and dependent teacher–student relationships. A *secure* teacher–student relationship is "characterized by trust, feeling in tune with the student, and perceptions that the student feels safe with the teacher, the student would seek help, and the teacher could console the student" (Pianta and Nimetz 1991, p. 384). A *dependent* relationship is characterized by teacher perceptions that the student is "constantly seeking help or reassurance and reacting negatively to separation from the teacher" (Pianta and Nimetz 1991, p. 385). This is akin to Howes and Ritchie's preschool typology of *resistant* teacher–student relationship.

Are teacher–child relationships attachment?

Not all positive relationships are attachment. Recall that attachment is a deep and enduring affectionate bond that connects one person to another across time and space. Children show preference for their attachment figure over other adults. They retreat to the AF when distressed and are readily soothed. The sensitive AF, in turn, attends to the needs of the

child and responds to the child's signals. Sensitive AFs make children feel secure, liberating them to explore their environment.

While some teacher–student relationships qualify as attachment relationships, some do not. In teacher–student relationships, it can be difficult to distinguish between extremely insecure attachment and non-attachment (Howes 1999). Non-attachment refers to how a child would relate to a casual acquaintance. Children have biologically innate propensities to attach to adults who spend time with them and who care for them. Thus, children, especially young children, may seek to form attachment relationships with teachers. However, some teachers and school structures promote non-attachment because they do not present the opportunity to attach. There is too little interaction between the teacher and a particular child. Other settings do present the child with the opportunity to attach, but the teacher is too unresponsive or insensitive for attachment to develop.

Many teacher–student relationships may fall between non-attachment and attachment because they have some, but not all, of the characteristics and fulfill some of the functions of an attachment relationship. Because the research we review is not limited to relationships that are clearly attachment, from this point forward we will use the term *teacher–student relationships* to acknowledge that while they are attachment-like, not all teacher–student relationships should be characterized as attachment.

Outcomes linked to teacher–student relationships

Preschool

Child outcomes linked to teacher–student relationships parallel those of attachment to parents. This has been found repeatedly at the preschool level. For example, Pianta and colleagues (1997) found that a positive teacher–student relationship predicted growth in language and conceptual knowledge. Howes and Ritchie (1999) found that teacher–student relationships predicted children's social competence. Children with secure teacher–student relationships played in more complex ways with their peers. Resistant children had more difficulties with peers, and avoidant children were more hesitant to engage with peers. Teachers perceived the resistant children as more disturbed in classroom behavior than avoidant children, perhaps because the avoidant children kept away from teachers.

Elementary school

Similar effects have been found at the elementary level. In a study of several hundred first to fifth graders, emotionally warm, sensitive teachers had students with greater growth in math and reading ability (Pianta *et al.* 2008). In a study of 827 first-grade classrooms in 32 states, emotionally supportive teachers had students who were more likely to engage in academic activities, experience positive relations with peers, and avoid negative behaviors (National Institute of Child Health and Human Development Early Child Care Research Network 2002).

Other studies have found that children with close teacher–student relationships tend to perform well academically including having higher scores on achievement tests, more positive attitudes toward school, more engagement in the classroom, less retention in grade, and fewer referrals for special education (Birch and Ladd 1997; Hamre and Pianta 2001). Even children whose school readiness scores indicate a high risk for retention or special education referral are less likely to actually be retained or referred if they have a close teacher–student relationship in kindergarten (Pianta and Nimetz 1991). In contrast,

children with a dependent teacher–student relationship—in which the child is possessive, clingy, and overly reliant on the teacher—tend to have adjustment problems like negative attitude toward school, poor academic performance, social withdrawal, and aggression.

Secondary school

It is more challenging to develop secure teacher–student relationships in secondary schools because children spend less time with a single teacher. Yet many adults can tell stories of secondary teachers whose caring had profound effects on them. In a recent book, *The Ones We Remember* (Pajares and Urdan 2008), educators reminisce about teachers who changed their lives. For example, Bergin (2008) wrote of a high school science teacher who influenced students' career choices and life-long pursuit of hobbies, and whom students continued to visit many years after leaving high school.

Research confirms these anecdotal stories that teacher–student relationships are important to secondary students. In a study of high school students in rural Massachusetts, attachment to both parent and teacher contributed to student's academic motivation and learning strategies, but the teacher–student relationship more strongly predicted classroom behavior (Learner and Kruger 1997). In another study, sixth to eighth graders who believed that their teacher cared about them were more motivated to try hard and pay attention in class, and earned higher grades (Wentzel 1997). In yet another study, Black youth were cooperative and engaged in the classrooms of teachers who focused on building trusting relationships with students; the same youth were suspended from another teacher's classroom for defiance (Gregory and Ripski 2008). In a study of junior high students, poor teacher–student relationships in math classes were associated with children not valuing math (Eccles *et al.* 1993).

Secure teacher–student relationships may also protect children from antisocial behavior like aggression, drug and alcohol use, violence, and early sexual activity (Howes and Ritchie 1999; Howes *et al.* 1988; NICHD Early Child Care Research Network 2002; Pianta *et al.* 1997). For example, in one study, youth who reported attachment-like relationships with their teachers were less likely to use drugs and alcohol, attempt suicide, engage in violence, or become sexually active at an early age (Resnick *et al.* 1997).

Longitudinal outcomes

Early teacher–student relationships may be particularly important because they predict long-term well-being in school. For example, a study in Texas found that positive teacher–student relationships in first grade were linked to engagement, effort, and attention in second grade and higher test scores in third grade among low-SES children (Hughes *et al.* 2008). In another study, a conflicted teacher–student relationship predicted reduced cooperative participation and school liking, and increased misconduct and attention problems, from fall of kindergarten to spring of first grade (Ladd and Burgess 2001). In a remarkable longitudinal study, an entire kindergarten population in a small city school district with a diverse population (35% African American) was followed through eighth grade (Hamre and Pianta 2001). A negative teacher–student relationship in kindergarten predicted lower grades, lower standardized test scores, and poorer work habits throughout elementary school, which in turn predicted lower academic achievement in eighth grade. This long-term outcome is noteworthy given that, by eighth grade, the children had transitioned through three school levels.

Early teacher–student relationships could have long-term outcomes because they influence subsequent relationships, perhaps because the quality of teacher–student relationships tends to be stable over time. For example, in the Ladd and Burgess (2001) study, teacher–student closeness and conflict were stable from fall of kindergarten to spring of first grade. In another study, 9 year olds' perceptions of their relationship with their current elementary teacher were predicted by their relationship with their first teacher when they were toddlers or preschoolers in childcare (Howes *et al.* 1998a, b). Perhaps they formed an internal working model of "teacher" as either positive or negative, and with each new teacher behaved in a way that was consistent with this model, thus eliciting similar patterns of interaction from the teachers. This is similar to parent–child attachment, which also tend to be stable across childhood.

The research on teacher–student relationships is correlational, so one cannot assume that a negative relationship caused later problems. It is plausible that early child behavior problems caused the negative relationship and/or later problems. Nevertheless, there is logical and theoretical support for causation from teacher–student relationship to school maladjustment.

In summary, evidence suggests that secure teacher–student relationships predict greater knowledge, higher test scores, greater academic motivation, and fewer retentions or special education referrals than insecure teacher–student relationships. In contrast, children who have conflicted relationships with teachers tend to like school less, experience less self-direction, and show lower levels of cooperation in classroom activities. This raises the important question of how teachers can develop more secure relationships with their students.

Antecedents of secure teacher–student relationships

The same antecedents of secure parent–child attachment predict secure teacher–student relationships. That is, secure relationships are more likely to develop when teachers are involved with, sensitive toward, and have frequent positive interactions with children (Howes and Hamilton 1992a; Howes and Smith 1995; Kontos *et al.* 1995; Whitebook *et al.* 1989). Ambivalent children tend to experience more teacher involvement and sensitivity than avoidant children, but less than secure children.

In addition, there may be some antecedents of secure relationships that are unique to classrooms. Teachers communicate caring for students by being well prepared for class, showing their "real" self, and holding high expectations for students (Davis 2003). Caring teachers also grant autonomy to students during classroom assignments. In a study of fourth and sixth graders, children reported feeling greater rapport with adults who were autonomy supporting rather than controlling (Gurland and Grolnick 2003). Autonomy support involved sensitivity to the child's agenda and providing children with choice. In this study, both controlling and autonomy-supportive teachers were emotionally positive with the children, so simple positivity did not explain differences in rapport. Reeve and Jang (2006) found that teacher behaviors like allowing students to work in their own way, offering encouragement, and avoiding should/ought statements correlated with students' perceptions of autonomy. An autonomy-supporting approach in the classroom is akin to the sensitive, non-intrusive care found in parents whose children are securely attached.

Similarity of attachment to parents and to teachers

Attachment is a relationship, not a trait inborn in children. That is, it is the result of many interactions between a specific adult and a specific child. Thus, children who are securely

attached to a parent might not be securely attached to a teacher. Research confirms that there is not much relationship between attachment to parents and attachment to teachers *in very young children* (Howes and Hamilton 1992b). In a study of White, middle-class preschoolers, only 45% of the children had the same security of attachment to mother and to childcare provider (Howes *et al.* 1988).

Among very young children, those with insecure parent–child attachment can develop a secure relationship with teachers. In the Howes *et al.* (1988) study, more children were securely attached to their caregiver than to their mother. In another study of infants in childcare in the Netherlands, where professional caregivers tend to be more sensitive than high-SES parents, half of the children who had an insecure relationship with both father and mother developed a secure relationship with the caregiver (Goossens and van IJzendoorn 1990).

Beyond infancy, however, children with insecure parent–child attachment are likely to develop insecure relationships with teachers (DeMulder *et al.* 2000). A possible reason why this pattern is not seen in younger children is that their internal models are still "in the making."

Among school-age children, attachment history influences new attachment relationships. Unfortunately, the behavior of insecure children elicits responses in teachers that make it difficult to attach to them. Such behavior includes clinginess, hostility, helplessness, and disobedience. This may explain why children's attachment to their parents affects the way teachers react to them (Pianta 1999; Sroufe 1996). Teachers interact with secure children in a warm manner and hold high standards for them to behave well. Teachers tend to interact with insecure children in a controlling manner, are less likely to expect compliance, and tend to use repeated directives. Teachers are more tolerant, nurturing, and controlling toward *resistant* children because teachers perceive them as immature and needy. Teachers tend to treat resistant children as though they were younger. Teachers are more likely to be angry and rejecting with *avoidant* children, and to isolate them because they defy adults and may hurt other children. Thus, teachers find it more difficult to develop a positive relationship with children who have insecure parent–child attachments.

Meeting the needs of insecure students

Recall that 1/3 to 1/2 of children have an insecure attachment with at least one parent. This means that insecure children are common in classrooms. Because teachers naturally react more negatively to insecure students, it is difficult for teachers to establish secure relationships with them. Howes and Ritchie (1999) found that children from difficult life circumstances can develop secure attachments to their preschool teachers, but less than 1/3 did so, suggesting that teachers do not readily develop a positive relationship with poor children who approach them with distrust or avoidance. Yet, a secure teacher–student relationship is an important protective factor for such children.

Fortunately, it is possible for insecure children to develop secure teacher–student relationships. Even in school-age children, both the child's attachment history and the behavior of the current teacher contribute to the new relationship. If teachers are able to behave in ways that *disconfirm* the insecure child's internal working models, then a secure relationship can develop between teacher and child. A caring teacher has to work to disconfirm insecure children's expectation that the teacher will be hostile, rejecting, or unresponsive. This is important because children with insecure parent–child attachment who are able to develop a secure teacher–student relationship fare better socially, emotionally, and academically (O'Connor and McCartney 2007). For example, in a study

of preschoolers, when the parent–child relationship was insecure, secure attachment to the teacher seemed to partially compensate because the children were more prosocial and emotionally positive than children with an insecure relationship to both parent *and* teacher (Mitchell-Copeland *et al.* 1997).

Children vary in how much they need to attach to teachers. Children who have secure attachment to parents are not likely to need an additional secure adult–child relationship, yet they are easier for teachers to attach to. In contrast, maltreated children have a special need for attachment to teachers, and may be particularly prone to seek psychological proximity to teachers, yet they are more difficult for teachers to like and support. In one study of 7- to 13-year-old maltreated children, the children were significantly more likely to wish that their teacher paid more attention to them than non-maltreated children. Children who wished that they were closer to their mothers also wished they were closer to their teachers (Lynch and Cicchetti 1992). In addition to having attachment-like relationships with teachers, children can feel attachment toward their school, our next topic.

School Bonding

School bonding refers to a sense of belonging at school and having a network of relationships with peers and teachers. School bonding is akin to attachment in that it can make children feel secure and valued, which can liberate them to take on intellectual and social challenges and explore new ideas. A child who is bonded to school has a sense that “people at school like me.” A child who is not bonded to school feels lonely, outcast, and alienated. In one study of a school of 1,500, students with no school bonding said “I don’t have any friends at school,” or “No one wants to talk to me at school” (Mouton *et al.* 1996). They reported not knowing the principal at all, and disliking all of the teachers except possibly one. They felt their teachers did not know or like them and treated them unfairly. They felt that teachers did not notice when they missed school, and did not want them to do well.

Both classrooms and schools can vary in socioemotional “climate,” or how valued they make students feel. The climate of a classroom is affected by the teacher–student relationship and how much a teacher enjoys students, although the particular composition of the students can make a large difference as well (Marsh *et al.* 2008). In secondary schools, how “students feel about school and their coursework is in large measure determined by the quality of the relationship they have with their teachers in specific classes” (Osterman 2000, p. 344). If students perceive their teachers as supportive and feel secure in teacher–student relationships, they have greater interest and engagement in school, which is related to achievement and grades. Clearly, teacher–student relationships are an important component of school bonding.

Participation in extracurricular activities is another important component of school bonding. High school students feel more connected to school when there is a high rate of participation in extracurricular activities in addition to a positive classroom climate (McNeely *et al.* 2002). In one study, participation in extracurricular activities at middle school prevented early school dropout (Mahoney and Cairns 1997). The least competent students benefited the most, even though their involvement was often a single extracurricular activity. This raises serious concerns about making extracurricular activities exclusionary. Many extracurricular activities require expertise before a child can participate (e.g., sports, music, quiz bowl, etc.) or require selection/election. Some activities require a certain GPA, even though grades have nothing to do with the activity. Such policies

preclude some children—probably those who need it most—from participation and the opportunity to "belong" at school.

Children report being happier and more motivated during extracurricular activities than while in class (Mahoney *et al.* 2006). Extracurricular activities are freely chosen and provide greater opportunity for establishing relationships with peers and coaches or teachers than do most classroom activities.

Identification with school, belongingness, and positive relationships with teachers are associated with lower levels of dropping out of school (Christenson and Thurlow 2004). Effective programs for school completion focus, at least in part, on building students' relationships within the school. School bonding is also linked to less depression in adolescents (Jacobson and Rowe 1999).

School bonding influences achievement. A study of kindergartners found that children who liked school participated in class more, which led to higher achievement (Ladd *et al.* 2000). In a study of low-income African American and Hispanic children, overall school climate—which leads to school bonding—predicted reading and math achievement scores in first grade and school adjustment in second grade (Esposito 2000). The positive effects of school bonding may be strongest in high poverty schools and for high-risk youth (Osterman 2000; Resnick *et al.* 1997).

School bonding is particularly important in middle schools (Osterman 2000), yet elementary schools are more likely to meet children's need for belongingness. Indeed, as children transition from elementary to junior high or middle school, and then again to high school they become more negative about school. These transitions are linked to a decline in grades, self-confidence, school interest, and extracurricular involvement (Juvonen 2007). The decline is not extreme for most children. It may be worse for children experiencing other changes such as moving or a divorce (Burchinal *et al.* 2008; Simmons and Blyth 1987; Zanobini and Usai 2002). With each transition, children must adjust to new teachers, new class structure, and a new mix of peers.

Why is there increased negativity in secondary schools? Too often attributes of the children, such as so-called raging hormones, are mistakenly blamed for school negativity, but the real problem may be that secondary schools are not designed for belongingness. Eccles and colleagues investigated the transition from elementary school to junior high school, from grade 6 to grade 7 (Eccles *et al.* 1993). They found a poor fit between the needs of children at this age and school structure. Junior highs are structured differently from elementary schools in several ways. Two key differences that interfere with school bonding are:

1. There is more emphasis on teacher control and discipline with less emphasis on student choice and self-management. Teachers spend less time teaching, and more time maintaining order. Yet, at this age, children seek more autonomy.
2. Teacher–student relationships are less personal and positive. Children see teachers as less friendly and teachers see children as less trustworthy, compared with the same children's relationships with their elementary teachers just 1 year earlier.

Children in K-8 programs, who do not make as many transitions, fare better than those who make more transitions. Simmons and Blyth (1987) followed 621 children in Milwaukee from sixth to tenth grade. Some children attended elementary school until sixth grade, junior high for 3 years, and high school for 3 years. Others attended elementary until eighth grade, and high school for 4 years. Those who had to transition to the junior high were more negative toward school, were less involved in extracurricular activities, had lower math achievement, lower grades, lower self-esteem (girls only), and were more victimized (boys only) than their

same-age peers who did not make the transition. There were more negative reactions when they transitioned yet again from the junior high to the senior high, particularly in self-esteem and extracurricular participation.

A decrease in school bonding as children move from elementary to secondary school is not inevitable. International comparisons of 11 to 15 year olds find that U.S. secondary students feel markedly less bonded and dislike school more than in some other countries (Juvonen 2007). Whether students bond to a school depends on whether the structure of the school presents opportunities for meeting attachment needs. We address ways to do this in the next section.

Recommendations

To feel securely connected to others is a basic human need (Baumeister and Leary 1995). Ideally, this need is met at school as well as at home. While attachment research has altered other major institutions such as hospitals for the better, it has not influenced schools sufficiently. One study found that about 25% of children in the upper elementary grades perceive school as an uncaring place (Watson *et al.* 1997). Clearly there is room for improvement. We recommend several approaches to promoting attachment-like relationships with teachers and school bonding. Some simply require individual teachers to behave in specific ways with children, but others may require programmatic or even structural changes in schools. We will begin with individual teachers.

Individual teachers

A teacher's relationship with each child is important for raising achievement levels as well as for improving socioemotional well-being. Teachers need to learn how to deal constructively with children who have insecure attachment to parents. It is a challenge not to act in ways that confirm insecure children's working models. Insecure children seek positive, warm, trusting relationships, but do not have the skills to create them. This means it is up to the teacher to change children's views of relationships and meet their socioemotional needs. Based on the research summarized above, we make six recommendations for how teachers can improve their relationships with students and foster school bonding:

1. Increase sensitivity and warm, positive interactions with students. Teacher sensitivity refers to accurate detection and interpretation of children's cues, provision of comfort, and responsiveness to distress (Pianta *et al.* 2008). One way teachers become more sensitive to children is to increase their knowledge of child development. Teachers who know more about child development are more sensitive in their interactions with children (Howes *et al.* 1988; Whitebook *et al.* 1989). Unfortunately, many colleges of education give too little time to child development coursework.
2. Be well prepared for class and hold high expectations for students. This is one way that teachers show they care about student achievement, in addition to increasing sensitivity and being responsive (Davis 2003). Wentzel (1997) found that middle-school students felt their teachers cared for them if they helped each student academically, like asking if they needed help, calling on them, making sure they understood content, teaching in a special way, and making class interesting. Non-caring teachers got off task, taught while students were not paying attention, and did not answer questions or explain things.

3. Be responsive to students' agendas by providing choice whenever possible. This may help students feel greater rapport with teachers. Note that choice may be less important for students from collectivist cultures than those from individualist cultures (Iyengar and Lepper 2000; Katz and Assor 2007).
4. Use induction rather than coercive discipline. Induction involves explaining the reason for rules and pointing out the consequences of breaking rules. Coercive discipline involves using threats, imposing the teacher's superior power, and taking advantage of the teacher's ability to control resources like recess time, grades, or detentions. Coercion interferes with caring relationships (Noddings 1992). High school students are more likely to feel school bonding if their school does not have harsh discipline policies, like expelling students for relatively minor infractions (McNeely *et al.* 2002). Children who are disciplined with induction—particularly victim-centered induction in which the adult points out how the child's behavior has made someone else feel—are likely to become prosocial and emotionally positive (C. Bergin 1987; Krevans and Gibbs 1996; Paulussen-Hoogeboom *et al.* 2007). Unfortunately, even though teachers find discipline to be a pervasive problem, less than 1% of peer-reviewed articles in elementary education journals over a 10-year period addressed the issue of how to effectively discipline (Hardman and Smith 2003). While there are many approaches to classroom discipline, few have been evaluated using good science. Readers are referred to Bergin and Bergin (1999) who discuss how to implement non-coercive discipline from a sound theoretical and research basis. They point out that effective discipline achieves compliance, but by using the least possible power and by keeping the emotional tone positive and respectful. Teachers can do this by using reasoned persuasion, rather than coercion.
5. Help students be kind, helpful, and accepting of one another. Peer culture is a key component of school bonding (Juvonen 2007). Students tend to feel greater school bonding if peers get along with each other (McNeely *et al.* 2002). One program, the Child Development Project, effectively promotes prosocial behavior through building a strong sense of community in the school and creating a caring classroom climate where teachers are warm, use inductive discipline, encourage cooperation among students, and use an authoritative teaching style (Schaps *et al.* 2004). Teachers can also help children become more prosocial by providing children with opportunities to care for and help each other (Mussen and Eisenberg 2001; Noddings 1992). Teachers can increase prosocial behavior through modeling, such as complimenting students, respecting students, and avoiding hurting their feelings (Wentzel 1997). Teachers can increase prosocial behavior by praising and expressing gratitude for kindnesses, such as "*you are a nice person*" or "*I really appreciate that you took the trouble to do that*" (Bartlett and DeSteno 2006; McCullough *et al.* 2008; Mills and Grusec 1989; Mussen and Eisenberg 2001).
6. Implement interventions for specific, difficult relationships. Pianta (1999) describes an intervention he refers to as "banking time" because the teacher "saves up" positive experiences in relationship "capital" that can later be "drawn upon." For 5 to 15 min each day, the teacher gives the child undivided attention and follows the child's lead in whatever activity the child chooses. During these few minutes, the teacher does not do any teaching, directing, or reinforcing, but rather acts as a sportscaster, simply giving a play-by-play narrative of the child's actions. The teacher conveys acceptance, interest, and safety to the child. This approach helps repair relationships where there are high levels of conflict and the adult has been controlling and dominating with the child. Relationship repair takes time, because insecure children have expectations that adults

are negative, unsafe, and untrustworthy. The school psychologist or counselors should be able to help teachers repair a difficult relationship with a specific child.

School-wide policies

The six approaches described above can be implemented by individual teachers within the confines of their own classrooms, regardless of the larger school context. However, some school policies and procedures can facilitate, or undermine, teacher–student relationships and school bonding. We make six additional recommendations for improving school-wide policies:

1. Implement school-wide interventions. In schools with high-risk populations, teacher–student relationships can be improved throughout the school. For example, in a therapeutic preschool where most children had been expelled from other preschools for misbehavior, teachers focused on being consistently positive in order to disconfirm children's internal models of adults as inconsistent, neglectful, or harsh. Very few of the children were securely attached to their teachers, but over time some became more secure (Howes and Ritchie 1998). Those who made the most progress were those who had initially been the most insecure.
2. Provide a variety of extracurricular activities that are accessible to students. High school students feel more connected when there is a high rate of participation in extracurricular activities (McNeely *et al.* 2002). Many high schools make participation expensive in a way that limits accessibility (e.g., Bettis and Adams 2003).
3. Keep schools small. A nationally representative study of 75,000 seventh to twelfth graders found that students feel more connected to their schools if the school is small (McNeely *et al.* 2002). The optimal size for bonding was about 300; however, the optimal size for academic curriculum may be larger. Some secondary schools are able to partially mimic the positive effects of smaller schools by creating "schools-within-a-school," which may also be called teams, pods, or learning communities (Felner *et al.* 2007). In contrast to school size, class size may not affect school bonding (McNeely *et al.* 2002). In fact, classrooms that are too small can result in children not having enough opportunity to find a peer buddy.
4. Provide continuity of people and place. Attachment takes time to develop. This requires that teachers and students stay together long enough to form relationships. In a preschool that emphasized relationships by having teachers move with children to older classrooms, researchers found that it took at least 9 months with an expert teacher before the children developed secure teacher–student relationships (Raikes 1993). This is probably an underestimate of the time needed for high-risk children, older children, or children with insecure attachment histories to establish secure relationships. In a childcare setting for homeless children in New York, attachment to teachers took from several months to a few years, even though bonding was given priority, and one-on-one time was regularly scheduled between teacher and child (Ansbach and Epstein 2000). Thus, we might not expect bonding to occur until the end of a typical school year, when relationships are normally ended. This situation could be improved in three ways:
   (a) Keep students together so peer groups are stable. Some secondary schools attempt to do this by having teams of children attend multiple classes together.
   (b) Keep children in the same building for several years. Some communities locate kindergarten and preschools for high-risk children for the entire district in a single

central location that is different from where they will attend elementary school. This means that as children advance in grade, they cannot drop in on their previous teachers. Some school districts have too many levels of schools—elementary, middle, junior high, and senior high—so that children only spend a few years at each building. This undermines school bonding.

(c) Keep children with the same teacher or team of teachers for multiple years. For example, in Sweden, teachers have the same students for grades 5–8 (Kerr and Stattin 2000). Pianta (1999) taught the same middle school children for multiple years and found that classroom management problems decreased, motivation for difficult academic tasks increased, and performance increased because he was able to develop relationships with children. Too few American schools do this. Even in high school, where it is theoretically possible to teach the same child for multiple years, teachers' course assignments sometimes keep this from happening. A child who takes math or a foreign language for 4 years might have a different teacher each year because one teacher is assigned to freshmen and another teacher is assigned to advanced students.

5. Facilitate transitions to new schools or teachers. If children must move from one school to another, they should be helped to make connections with children, families, and teachers as they transition. Two procedures that help are to place new students with the same teacher their older siblings had and to place children with friends. Other procedures might include hosting informal family nights with teachers at the school, hosting school visits in the spring for children who will enter the new school in the fall, and assigning an older student as a "buddy" to show the new student around.
6. Decrease transitions in and out of the classroom. In a single day, an elementary child may go to a speech therapist, reading specialist, and counselor or other specialist. When this coming and going is combined with the other teachers the child experiences such as gym, music, art, and science, there are too many transitions. Ironically, high-risk children who have difficulty adapting to the classroom and most need stability tend to spend the most time coming and going from the classroom. When there are several transitioning children in a classroom, it can be disruptive to the students. When services are delivered by many different specialists to high-risk children, their risk may actually increase (Pianta 1999). Such a structure is designed to meet the academic needs of children, but disregards their socioemotional needs. One possible solution is to have specialists serve as in-classroom consultants to teachers, so that children stay in the classroom. Some high schools attempt to eliminate classroom transitions for high-risk adolescents with a "school within a school" approach, but this may be too late for children disenfranchised from school.

Figure 2 displays a model summarizing our 12 recommendations and links among attachment at school and academic achievement.

Conclusions

Nel Noddings (1992) argues that the first job of schools is to care for children. It is morally and practically wrong to assert that schools should only concentrate on academic goals; children do not learn academically if they are not cared for. All students want to learn, although not necessarily the content they are asked to learn in school. Caring for children prepares them to be receptive to learning such content. Children should feel safe in their

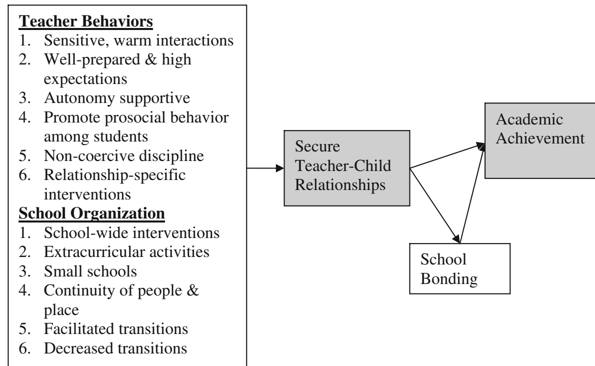

Fig. 2 Model of how teacher behavior and school organization might contribute to attachment at school and academic achievement. Each link has some research support

relationships with their teachers—they should be able to admit confusion, errors, and even a dislike of the subject matter. Teachers should care for students even if they are not interested in the subject the teacher is passionate about. Of course, teachers are more attracted to children who share their passions for a topic, but all children, even those with interests different from the teacher's, must be valued and cared for. Noddings suggests that teachers should avoid pernicious gossip about children in the lounge, know where their students live, join them for lunch, and chat with them. She points out that while families use mealtime as an important arena for relationship building, teachers seldom do.

Positive teacher–student relationships may be particularly important for children at the bottom of the achievement gap. Several of the studies reviewed above found that positive effects were strongest for low-SES, low-achieving, and African American children. For example, in the Hamre and Pianta (2001) longitudinal study, relationship problems with their kindergarten teacher predicted maladjustment in junior high most strongly for boys, African Americans, children with poor verbal ability, and children with initial behavior problems. Vulnerable children who developed positive relationships with teachers were less likely to develop later behavior problems at school. It may be more challenging for teachers to establish secure relationships with low-SES children because low SES is related to insecure parent–child attachment (e.g., NICHD Early Child Care Research Network 1997). Disorganized attachment is almost twice as prevalent in low-SES than middle-SES children (Lyons-Ruth *et al.* 1990). Perhaps this is because low SES is linked to a series of risk factors such as low education, increased drug use, and lack of support from the father, which are linked with less sensitive parenting (Tarabulsy *et al.* 2005). Yet, secure attachment occurs in spite of poverty when parents are warm and accepting, not intrusive, and do not use physical punishment (Barnett *et al.* 1998).

Establishing school bonding may be especially challenging for students who are in the ethnic minority at their school. Adolescents tend to feel more attached to school when a high proportion of students are their same ethnicity (M. K. Johnson *et al.* 2001). However, ethnically segregated schools are not ideal for many reasons, including inequality of education, so multi-ethnic schools may need to put forth special effort to ensure that all students feel they belong.

Secure teacher–student relationships may seem like a low priority in an era of high stakes testing. However, children's socioemotional well-being is linked to achievement. Higher quality education is the result of healthy relationships from preschool to high school. In a study of preschoolers, teacher–student interaction was more predictive of academic, language, and social skill development than other aspects of the preschool

setting, such as teacher–student ratio, curriculum, class size, and physical environment (Mashburn *et al.* 2008). Among school-age children, the effect size of teacher–student relationships is large, larger than typical educational innovations or curriculum changes (Cornelius-White 2007). This suggests that improving teacher–student relationships could be a particularly powerful way to improve achievement, particularly for at-risk groups. Most of our recommendations are low cost because they simply require improved relationships with children, rather than new curriculum or infrastructure. More importantly, promoting attachment-like teacher–student relationships and school bonding should be given priority because it promotes children's well-being.

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