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## Student trust in teachers and student perceptions of safety: positive predictors of student identification with school

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### ABSTRACT

This study examined the effects of student trust in teacher and student perceptions of safety on identification with school. Data were collected from one large urban district in an eastern state. Participants included 5441 students in 3rd through 12th grades from 49 schools. Students responded to surveys that assessed student trust in teachers, safety and identification with school. Free and Reduced Lunch (a proxy for SES), school level and ethnicity were included as control variables. Two hypotheses guided the study. Hypothesis 1 stated that student trust, safety and identification with school would positively covary. Hypothesis 2 predicted that student trust in teachers and perceptions of safety were school properties that would individually and collectively explain differences among schools in student identification with school. Both hypotheses were confirmed. The results of the hierarchical linear model indicated that student trust in teachers and school safety accounted for 98% of the 22% of variance that exists among schools in student identification. SES, school level and ethnicity were not significant predictors of identification with school. Findings suggest that student trust in teachers and perceptions of safety may significantly contribute to student identification above the effects of SES, ethnicity and school level.

Identification with school which refers to students' sense of belonging and valuing of school and school-related outcomes (Voelkl, 1997) has important implications for student success and well-being. Students who identify with school are more likely to engage, achieve, and thus, also graduate. Students make cognitive decisions regarding the importance of school for their future success in life and establish affective connections with school and individuals in the school environment. Healthy affective and cognitive identification with school are highly dependent on positive relationships with others (Goodenow, 1992; Wehlage, 1989). School administrators and teachers have the positional power to influence school climate factors and therefore create the conditions in which students choose to identify in healthy ways. As educational leaders across the USA seek to improve student achievement and graduation rates, evidence continues to mount that the quality of interpersonal relationships really matter; how administrators, teachers, students and parents relate to one another sets the tone for everything that happens in schools (Cohen, McCabe, Michelli, & Pickeral, 2009; Martin & Dowson, 2009; Roorda, Koomen, Spilt, & Oort, 2011). This study further develops that evidence base.

For students, a strong sense of belongingness is dependent on high-quality relationships with their teachers and peers. This study examines the degree to which student identification with school varies individually and collectively with students' perceptions of trust in their teachers and perceptions of safety at school. Student trust in teachers serves as an indicator of teacher–student relationship quality



and student perceptions of safety say a lot about peer relationship quality. We expect these two variables to be highly correlated. In schools where students trust their teachers, they may be more likely to take risks associated with reporting bullying and other unsafe behaviour, which would result in greater adult awareness of these issues and presumably safer schools. In schools where students do not feel safe and may not trust their teachers to keep them safe, they would certainly be less likely to take risks. Schools characterized by unsafe conditions pose significant costs for schools that can result in teacher burnout, high teacher turnover, loss of motivation and decreased student sense of belonging leading to emotional and/or physical withdrawal (Browers & Tomic, 2000; Buhs, Ladd, & Herald, 2006; Cornell & Mayer, 2010). We do not know of previous studies that have investigated the links among student trust in teachers, student perceptions of safety and student identification with school.

In the high stakes era of school reform where school leaders are needing and seeking the malleable opportunities for improving schools, it seems appropriate to focus on the important effects that school climate, particularly a climate of trust and safety, has on the students' sense of identification with school. The following discussion highlights our conceptual rationale for the importance of trust and safety in fostering identification with school.

## Theoretical framework

### *Identification with school*

Identification with school refers to the students' sense of belonging and valuing of school and school-related outcomes (Voelkl, 1997). This definition suggests both an affective component and a cognitive assessment about the importance of school. Students who feel accepted and feel like school is a place that they belong are likely to develop an emotional attachment or bonding to school. In contrast, students who feel like they are not accepted and that they do not fit in school tend to withdraw from school. This affective component is accompanied by cognitive assessments of the importance of school for their future success in life. Although disengaged students may have a sense that school is valuable as a pathway to success for some, due to their negative experiences with schooling they may adopt self-protective beliefs that it is not important for them personally.

Like many constructs in the social sciences, identification with school has been examined in multiple ways, making use of a wide variety of terminology. Terms such as affiliation, involvement, attachment, commitment, bonding, engagement, school membership, relatedness, alienation, withdrawal and dis-identification have all been used interchangeably in the literature (Connell, 1990; Connell & Wellborn, 1991; Finn, 1989; Furrer & Skinner, 2003; Goodenow, 1992, 1993; Osborne, 1995, 1997; Steele, 1992, 1997; Wehlage, 1989). Along with the multiplicity of terms, there are a host of differing conceptualizations and rationales related to identification with school. Most of the explanations have focused on prior academic performance, participation in academics, stereotype threat, peer pressure, rules, regulations and questionable or rigid disciplinary practices. While all of these conceptualizations seem to partially explain identification with school, they do not focus specifically on what schools can do to create a climate that is conducive to its formation.

Much of the literature on this topic has attempted to explain the underperformance and school withdrawal of students of colour; particularly African-American students. Some have suggested that African-American students tend to disconnect their perceptions of self from academic success as a way of protecting their self-esteem (Connell & Wellborn, 1991; Furrer & Skinner, 2003); others propose that fear of failure (Osborne, 1997; Ogbu & Simons, 1998) and fear of confirming negative stereotypes (Steele, 1992) prevent some students from putting forth adequate effort. Still others argue that African-American students are discouraged from engaging in behaviours that would lead to academic success because they would have to identify with the dominant culture and would be at risk of being criticized by their peers as *acting white* (Fordham, 1996; Majors & Billson, 1992). Not all scholars who have examined these issues have found that African-American students dis-identify with school. Voelkl (1997), the developer of the *Identification with School Questionnaire*, found that



African-American students demonstrated greater identification with school than the white students in her study, although she cautioned that this may have been due to the general way the questions of valuing school were framed. She suggested that African-American students may have abstract ideas about the importance of school in general but have problems with the more concrete conceptualization of the value of school for them personally.

While researchers have disagreed about the definition, causes and factors leading to the formation of identification with school, most agree about the significant and deleterious effects of lack of identification or dis-identification with school. Students who do not have a sense of belonging and who do not value school as being important for their life are at risk for a wide array of school-related problems such as behaviour problems, delinquency, poor achievement and potentially even dropping out (Finn, 1989; Finn & Voelkl, 1993; Osborne, 1995, 1997; Voelkl, 1996, 1997; Wehlage, 1989).

We believe that part of the difficulty in defining identification with school has to do with the way in which the formation of identification with school has been conceptualized. For instance, while identification with school refers to an emotional attachment to school and cognitive assessments of the importance of school, Finn (1989) suggested that it is largely explained by students' prior academic achievement and the degree of their active participation in positive classroom behaviours such as paying attention in class and doing more than just assigned work. However, we would argue that because identification with school is grounded in emotional bonding with school, it makes sense that it is largely the result of the relationships that students have with teachers. Even the cognitive assessments that students make about the value of school may be based on those relationships.

A number of scholars interested in student identification with school have emphasized the importance of relationships. Wehlage (1989) referred to this emotional bonding with school as a psychological sense of school membership. He argued that school membership takes place as a result of the bonds that a student develops with significant others within the school and with the norms governing the institution. The strength of the bonds that the student develops with school personnel is dependent upon the extent to which the student feels supported and able to experience positive interactions and to establish on-going positive relationships with key significant others in the school environment. Goodenow (1992) stressed the importance of the student feeling accepted, respected and included. Others refer to this as a sense of relatedness and suggest that these interactions with significant others lead to the student developing positive perceptions about their self and expectations about the trustworthiness of others (Connell, 1990; Connell & Wellborn, 1991; Furrer & Skinner, 2003).

Moreover, identification with school is not only an individual characteristic of students but it is a collective property within a school. How students come to value school is partly due to the development of collective sense of identity (Ashmore, Deaux, & McLaughlin-Volpe, 2004) or a sense of social identity. Students within a school develop common ideas about the importance of school and about their sense of belonging. This collective sense of identity according to Ashmore is not only influenced by the shared values and beliefs of students but it is also influenced by the context of the school. How representative and inclusive the school is perceived to be by subgroups or how trustworthy teachers are believed to be can influence the formation of this collective sense of identity.

More recent work in the area of trust and identification with school supports the importance of establishing a school context that includes positive trusting relationships between students and teachers as being vitally important for the formation and maintenance of identification with school (Adams, 2014; Adams, Forsyth, & Mitchell, 2009; Mitchell, Forsyth, & Robinson, 2008). For instance Adams found that collective student trust, which was also conceived of as a social condition of schools, was the strongest predictor of student identification after controlling for socio-economic status (SES) and achievement. He reported that a one standard deviation increase in student trust resulted in a .18 standard deviation increase in identification with school. Other research (Adams et al., 2009; Mitchell et al., 2008) also found parent and student trust to be important predictors of identification with school above and beyond the effects of SES, school level and prior academic achievement.



## Trust in schools

The philosopher Baier (1986) observed that we tend to notice trust as we notice air, only as it becomes scarce or polluted. It is commonly agreed that there has been a decline in societal trust in all of our institutions, including schools (Hoy & Tschannen-Moran, 1999; Meier, 2002; Tschannen-Moran & Hoy, 2000). Recent legislation and renewed interest in parent choice initiatives, home schools, charter schools and voucher programmes are evidence of this waning trust. Tyler and Kramer (1996) noted that modern society has moved away from encouraging long-term bonds between individuals and institutions as a result of a shift in the structure of society away from hierarchical control and a push for more lateral alliances around short term and temporary projects. It is also due to significant changes in the level of expectations regarding equality, a more informed general public and insistence upon accountability (Hoy & Tschannen-Moran, 1999; Tschannen-Moran & Hoy, 2000).

Like identification with school, trust has been defined in multiple ways and examined through a variety of different lenses. The definition of trust has evolved over time from a unidimensional one that focused on individual traits and institutional characteristics to one that focuses on the dynamic and multifaceted nature of trust (Adams, 2014; Forsyth, Adams, & Hoy, 2011; Lewicki and Bunker, 1996; Mishra, 1996; Hoy & Tschannen-Moran, 1999; Sheppard & Sherman, 1998; Tschannen-Moran, 2004, 2014). Based on earlier work by Mishra (1996) in which trust was conceptualized as multidimensional and involving both confidence and willingness to risk, Hoy and Tschannen-Moran defined trust as 'an individual's or group's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, reliable competent, honest and open' (Hoy & Tschannen-Moran, 1999, p. 189).

This definition of trust has spawned a line of research that has been applied to the work of schools and extensively tested over the past two decades. Trust in schools has been linked to increased collaboration (Adams & Forsyth, 2007; Mitchell, Ripley, Adams, & Raju, 2011; Tschannen-Moran, 2001), healthy school climates (Smith, Hoy & Sweetland, 2001; Tarter, & Hoy, 2004; Tschannen-Moran, Parish, & DiPaola, 2006), enabling school structures (Adams & Forsyth, 2007; Hoy & Sweetland, 2001), collective teacher efficacy (Goddard, Hoy & Woolfolk Hoy, 2000; Goddard, Tschannen-Moran, & Hoy, 2001), teachers' continuous learning (Kensler, Caskie, Barber, & White, 2009), parent involvement (Adams et al., 2009; Forsyth, Adams, & Barnes, 2004; Mitchell et al., 2008), academic optimism (Bevel & Mitchell, 2012; Hoy, Tarter, & Woolfolk Hoy, 2006; Tarter & Hoy, 2004), student identification with school (Mitchell et al., 2008) and academic performance (Goddard et al., 2001; Hoy & Tschannen-Moran, 1999; Tschannen-Moran, 2004).

Researchers agree that trust is an essential element in all relationships and thus violations of trust prove to be very costly and difficult to repair (Lewicki and Bunker, 1996; Elangovan & Shapiro, 1998; Hoy & Tschannen-Moran, 1999; Tschannen-Moran, 2001). Trust is closely linked with cooperative behaviour, without which organizational effectiveness and efficiency are severely hampered (Hoy & Sweetland, 2001). Thus, trust is seen as being a vital ingredient in the work of schools and involves specific expectations of role relationships (Bryk & Schneider, 1996, 2002; Hoy & Tschannen-Moran, 1999). Bryk and Schneider refer to this as relational trust, such that all parties in school (principals, teachers, students and parents) have expectations that the other party will behave in ways that are right and good. The fulfilment of these expectations over time leads to social capital and acts as a resource in times of transition and change. Thus, relational trust serves not only as a means to facilitate teaching and learning but it is also an important end in itself.

Not only does trust exist as relational or interpersonal trust but trust has also been shown to exist at the institutional and organizational levels (Adams, 2014; Forsyth et al., 2011; Lewis & Weigert, 1985). Within the context of organizations such as schools, trust has been described as a normative property that results from multiple social exchanges between members of one group of individuals with members of another group. Forsyth, Adams and Hoy refer to this as collective trust, noting that teachers as a group form trusting bonds with various other role groups, including, their colleagues, the principal, students and parents. In like manner, students form collective perceptions of the trustworthiness



of teachers. This emergence of a common consensus regarding the trustworthiness of teachers has important consequences for student behaviour. We reason that if students believe that they can trust their teachers, they will be more likely to cooperate with instructional goals and to be more actively engaged and, thus, to experience greater identification with school. They may also be more likely to work with the adults to cultivate and sustain safe schools.

### *School safety*

Relatively speaking, schools are safe places for most students and teachers. Children exhibit far more 'appropriate, positive, and engaged' behaviours than not; and of the disruptive behaviours, 'bullying, intimidation, and incivility' are by far the most common (Mayer & Furlong, 2010, p. 17). Disruptions in school, whether in the form of bullying and even more violent acts of harm against others, erode a sense of safety for both children and adults. Fearing for one's safety limits students' and teachers' learning capacity, thus making school safety a primary concern related to schools' goal attainment (Cornell & Mayer, 2010). Although general trends of violence and crime in US schools appear to have been decreasing since 1993, higher percentages of students have reported concerns for their safety as reasons to stay home from school than ever before (Mayer & Furlong, 2010). Individual actions, positive or negative, contribute to the complex ecologies of schools and these ecologies, in turn, influence individual actions.

Family background, including poverty, unemployment, mobility and race predict behaviours associated with school disorder or low levels of school safety (Chen, 2007; Chen & Weikart, 2008; Fleming, Barner, Hudson, & Rosignon-Carmouche, 2000; Gottfredson, Gottfredson, Payne, & Gottfredson, 2005; Welsh, 2003). Although the study of school safety may be focused within the borders of the school building, Mateu-Gelabert and Lune (2003), in their ethnographic study of an urban middle school, presented evidence of conflict originating in the surrounding community and erupting in school and vice versa. This bidirectional relationship transcended the boundaries of the school walls and magnified the importance of considering community characteristics when aiming to understand school safety. However, in a large scale, multilevel study including over 7500 students in 11 Philadelphia middle schools, the contribution of community-related factors (high poverty) accounted for far less variance (6%) in school disorder than individual factors, such as school effort, positive peer associations, involvement, belief in rules, age, sex and race (94%) (Welsh, Greene, & Jenkins, 1999). In related and subsequent studies, school stability mediated the relationship between community characteristics and school disorder (Kitsantas, Ware, & Martinez-Arias, 2004; Welsh, Stokes, & Greene, 2000) and school climate explained significant variance in school disorder beyond individual factors (Gottfredson et al., 2005; Welsh, 2000). Therefore, although educators cannot change the demographic characteristics of their students that may predict disorderly behaviours, educators can influence school and classroom-level characteristics associated with safer schools by creating a climate of trust between teachers and students, and thus contribute to making schools safer for students coming from less-than-safe communities. Attending to school climate-related factors that improve school safety has been shown to have positive effects for both teachers and students including 'academic achievement, school success, effective violence prevention, students' healthy development, and teacher retention' (Cohen et al., 2009, p. 181). Students who trust their teachers and administrators are more likely to report unsafe situations allowing teachers and administrators to intervene and create a safer school environment. Moreover, students who have established a trusting relationship with teachers will likely have a greater sense of affiliation and bonding with school and the adults in the school.

Teachers who work in schools characterized by disorder and disruption find teaching so challenging that they report a lowered sense of self-efficacy and higher rates of burnout (Brouwers & Tomic, 2000). These typically early career teachers find teaching intolerable and tend to leave the profession at higher rates. The teachers who do find the desire and capacity to persist often transfer to less demanding school environments after gaining experience, creating openings for more early career teachers, thus perpetuating the cycle (Ingersoll, 2001). High rates of teacher turnover in the schools serving high



poverty and high minority students result in the students receiving inconsistent instructional quality that makes closing the achievement gap especially challenging (Johnson, 2006).

School disorder has both direct and indirect effects on student achievement (Chen, 2007; Chen & Weikart, 2008). Using structural equation modelling, Chen and Weikart (2008) found that student background, school structure and climate variables explained 82% of the variance in student achievement for students in 212 New York City middle schools. Students' race and income level directly predicted academic achievement. Additionally, school climate factors such as school size and attendance rates mediated the relationship between students' race and income level and academic achievement. Student attendance explained the relationship between school disorder and student achievement, suggesting that students' attendance rates were lower in schools where school disorder was more prevalent.

School disorder distracts student attention and energy to learning activities. When schools are perceived unsafe, students respond by avoiding the schools. The lowered attendance rate further deprives students the opportunity to learn in a socially conducive environment. (Chen & Weikart, 2008, p. 16)

Studies that examined the effects of bullying on students, the most common form of school disorder (Mayer & Furlong, 2010), reinforced these findings. Students who are victimized disengage from school, achieve at lower levels and may eventually leave school early (Swearer, Espelage, Vaillancourt, & Hymel, 2010). Even relatively low and persistent levels of aggression cause emotional distress that erodes school success (Mayer & Furlong, 2010).

## Rationale and hypotheses

Identification with school is vital for student success and lack of identification with school puts students at risk of dropping out of school and a host of school-related problems (Finn, 1989; Voelkl, 1997). Prior work in the area of trust though modest seems to indicate that there is an important relationship between trust and identification with school (Adams, 2014; Adams et al., 2009; Mitchell et al., 2008). Because the primary work of schools is heavily rooted in relationships, when trust has been damaged it becomes extremely difficult for administrators, teachers, students and parents to effectively work together on the important task of educating all children (Hoy & Tschannen-Moran, 1999; Tschannen-Moran, 2004). We contend that when students trust teachers and believe that they have their best interest at heart that they will be more likely to value school and school-related outcomes, to feel like they belong, and to work together with teachers to meet academic goals. These relationships are likely reciprocal. Trust is a risky business, and students are not likely to risk trusting teachers if teachers do not trust their students. Moreover, it is incumbent upon teachers, because of their position of power, to take the lead in establishing trusting relationships with their students. Prior studies have shown that there is a positive relationship between student and faculty trust and identification with school (Adams, 2014; Adams et al., 2009; Mitchell et al., 2008). However, the empirical study of the effects of student trust in teachers on student identification is in its infancy. Trust between teachers and students would seem to be vital to the formation of identification with school. Since only a small number of studies could be found that have explored this relationship, the current study seeks to confirm this relationship and to add to the body of literature on this topic by examining the relationship of student trust in teacher with identification with school using a different sample.

To our knowledge this is the first study to also empirically explore the relationship between student perceptions of safety and identification with school. Some have suggested that when students have concerns for their personal safety this distracts from achievement and can lead to disengagement and dropout potential (Mayer & Furlong, 2010; Swearer et al., 2010). Students who do not feel safe are likely to also feel like school is not a place where they belong and to devalue the importance of school for their future life goals. Maslow (1954) asserted that safety needs are outweighed only by physiological needs. Needs for belonging and self-actualization can only be met after safety needs have been satisfied. Therefore, in order for students to be identified with school their need for safety must be met.



In addition although to our knowledge this is the first study to empirically explore the relationship between student trust in teachers and student perceptions of safety we suspect that trust and safety will be correlated. It is likely that when students trust teachers they will be more likely to talk with them about issues that involve safety and to believe that teachers will look after their best interest. Thus, we hypothesize that:

H: Student trust in teachers, student perceptions of safety and student identification with school will covary.

So far, we have predicted relationships between our independent variables and our dependent variable. However, we recognize that identification with school is complex and that students exist within the context of schools. Therefore, we believe it is appropriate to look at both the effect of individual differences in identification with school as well as normative differences in schools that can affect identification with school. Patrick, Ryan, and Kaplan (2007) demonstrated that student engagement was positively correlated with the social environment and perceptions of teacher supportiveness. We see student trust in teachers and perception of safety as collective properties of a school that can serve to facilitate identification with school. We argue that because identification with school is based upon trusting relationships and because trust involves both confidence and risk that trust and safety will independently and collectively work to create a climate that fosters identification with school. Therefore, we hypothesize that:

H2: Student trust in teachers and perceptions of safety are school properties that will independently and collectively be associated with differences among schools in student identification.

## Method

In order to test our first hypothesis regarding the relationship between student trust in teachers, perceptions of safety and identification with school, we conducted a quantitative investigation that included descriptive and correlational analysis. To further test our second hypothesis that student trust in teachers and perceptions of safety are school properties that account for differences among schools in identification with school we employed hierarchical linear modelling (HLM). This section will highlight our data sources, measures and our analytic technique.

### Study design

Data were collected in the spring of the 2008–2009 school year from one large urban district in an eastern state of the US as a collaborative effort between researchers and the school district. The school district asked the researchers to provide survey items to be included on an annual stakeholder survey of teachers, parents and students along with items provided by the school district, to tap the climate of the schools. For the purpose of this study, items that focused on student trust in teacher, student perceptions of safety and student identification with school were analysed.

### Participants

The student survey was administered to 8256 students in 3rd through 12th grade. After eliminating surveys that contained missing data and limiting our analysis to African-American and Caucasian students, 5441 surveys were used for this study. Of our final sample, 59.8% were elementary students, 22.6% were middle school students and 17.6% were high school students. These percentages were very close to the original percentages prior to removing unusable surveys. The ethnicity reported by students in the final sample was 71.8% African-American and 28.2% Caucasian. The proportion of other racial and ethnic groups was too small to be included in the analysis. Students were nested within a total of 49 schools which included 35 elementary schools, 9 middle schools and 5 high schools.



## Measures

The student climate survey was distributed to randomly selected classrooms representing about 50% of the students in grades 3–12 in the participating school district. Three scales were included on scanable survey forms that included *Student Identification with School*, *Student Trust in Teacher* and *Student Perception of Safety*. All three scales utilized a 5-point Likert type response set that ranged from strongly disagree to strongly agree. Students were told that their participation was voluntary and that they could skip any items they did not feel comfortable answering.

### Student identification with school

The *Student Identification with School Scale* was an 11-item scale. Most of these items were taken directly from the original Identification with School Scale developed by Voelkl (1996), while several others were slightly modified by the school district that administered the surveys. Items reflected students' sense of belonging and valuing of school. Sample items included 'I feel proud of being part of my school', 'I feel like I'm a part of my school', 'School is more important than most people think' and 'Most of the things we learn in school are worthless' (item reverse scored). Because the Identification with School scale had been modified by the school district we conducted an exploratory factor analysis to assess the construct validity of the modified scale used in our study. We used principal axis factor analysis with Varimax rotation in order to assess the factor loadings and dimensionality of this scale. Additionally, a Cronbach's alpha coefficient of internal consistency was calculated to test for reliability. A factor analysis of the 11-item scale measuring identification with school indicated that sense of belonging and valuing loaded on one factor. Only item number six ('The only time I get attention at school is when I cause trouble') did not covary sufficiently with the other items to be considered valid and thus was removed. Factor analysis conducted for the 10 remaining items resulted in a single factor that explained 78.5% of variance, with an eigenvalue of 7.85 and factor coefficients that ranged from .70 to .97. The alpha coefficient of reliability was .96.

### Student trust in teacher

The *Student Trust in Teacher Scale* consisted of 10 items that were taken from the original scale developed by Adams and Forsyth (2008). Sample items on this scale included 'teachers are always ready to help', 'teachers always do what they are supposed to do' and 'teachers at this school are always honest with me'. This scale had a Cronbach alpha reliability score of .93 in our study and reported reliability of .90 (Forsyth et al., 2011).

### Student perception of safety

The *Student Perception of Safety Scale* was comprised of a 9-item scale used by the school district to assess student perceptions of safety. These items were subjected to a factor analysis and two components were extracted that represented feelings of safety and feelings of being threatened. These two factors merged into a single factor in a second order factor analysis. The Cronbach alpha score for this scale was .72. Sample items on this scale were 'I feel safe inside the school', 'I have been threatened or bullied (reverse scored)' and 'Students are picked on or teased'.

### Covariates

School level, minority status and percent free and reduced lunch were included as covariates. When the data were aggregated for the school-level analyses, school level was dummy coded such that grades 3–5 were coded 1 for elementary school, grades 6–12 were coded 0 for secondary status and minority status was dummy coded as 1 = African-American, 0 = Non-African-American /Caucasian. The percent of students in the school who were eligible for free and reduced lunch was used as a proxy for SES. While we were unable to collect data regarding the SES of individual students, 59% of the students in this district were in the free and reduced lunch programme. Information regarding the gender of the students was not collected.



## Analytical technique

### Descriptive and correlational analysis

To test our first hypothesis regarding the relationship between identification with school, student trust in teachers and student perceptions of safety we conducted preliminary descriptive and correlational analyses of individual student and school variables. Since prior studies had indicated that there was a relationship between school level and identification with school (Adams et al., 2009; Furrer & Skinner, 2003; Mitchell et al., 2008), we included school level as one of the control variables dummy coded as (elementary = 1, secondary = 0) in our analysis. In addition, because of the mixed reports in the literature about the relationship between ethnicity/minority status and identification, we included ethnicity/minority status as a control variable (African-American coded as 1 and Non-African-American/Caucasian coded as 0). Finally, we also included the percent of students eligible for free and reduced lunch as a proxy for SES as a control variable because we suspected that SES might be related to identification with school because of its known relationship with achievement. Because we did not have access to student-level achievement scores we were unable to include achievement into our analyses.

### Multilevel analysis

Our primary analysis was concerned with understanding how norms of trust and school safety affect student identification with school. We were concerned with two levels of analysis: level 1 analysis involved individual students and level 2 analysis involved students within schools. Because this study contained students nested within schools and was designed to predict student identification with school as being a function of school properties, namely student trust in teachers and student perceptions of safety, we selected HLM as our primary analytic technique. While identification with school may differ from student to student, we suspected that students within schools would be more alike than different in their levels of identification with school (O'Connell & McCoach, 2008). Multilevel modelling provided a tool for taking into account both individual differences and school effects, and assisted us in dealing with issues related to aggregation bias and inaccurate estimation of standard errors commonly attributed to traditional linear model analysis (Raudenbush & Bryk, 2002). As a result, this analysis allowed us to accurately predict individual student identification with school as being partly a function of school membership and partly a function of individual differences among students.

### Unconditional model

To test Hypothesis 2 which stated that student trust in teachers and perceptions of safety are school properties that would be positively and significantly associated with differences between schools in student identification, we conducted multilevel modelling using HLM7. Prior to beginning our analysis we converted our data to standard scores. We began our multilevel analysis with two unconditional models that allowed us to determine whether our predictor variables (student trust in teachers and student perceptions of safety) could be considered school properties and to justify aggregation. HLM 7 allowed us to calculate the Intraclass Correlation Coefficients (ICC-1) for the variables in our study using the formula (Total Variance/Level 1 variance) of the unconditional model. ICC-1s captured the variation between schools in our predictor variables and is commonly used to justify aggregation (Adams, 2014; Hoy, Tarter, & Woolfolk Hoy, 2006; Van Houtte & Van Maele, 2011). Individual variation in student trust was modelled as  $Y(Z\ trust)_{ij} = \beta_{0j} + r_{ij}$  for the unconditional model. The individual variation in student perceptions of safety was modelled in the same manner. We also calculated the ICC-2s for student trust in teachers and student perception of safety. The ICC-2s measured the degree of within group agreement among students (Glisson & James, 2002). To calculate the ICC-2s we used IBM SPSS 22 to calculate two One-way Random Effects ANOVAs and used the formula (Mean Square Between-Mean Square Within/Mean Square Between).

In like manner, we also calculated the ICC-1 and ICC-2 for our criterion variable (student identification with school) because we were interested in determining how much of the variance in our



outcome variable could be attributed to school differences and the extent to which there was inter-rater agreement among students nested within schools. Individual variation in student identification (zsid) for the unconditional model was represented by the following level I and level II equations for the Null Model:

$$\text{Level I: Level I: ZSID} = \beta_{0j} + r_{ij}$$

$$\text{Level II: } \beta_{0j} = \gamma_{00} + u_{0j}$$

### *Random coefficients regression model*

Because prior studies had indicated the possibility of a relationship between school level and ethnicity with identification with school we added both elementary status and minority status to our Level I analysis for Model 1 and modelled it as:

$$(1) \text{ Level I: ZSID}_{ij} = \beta_{0j} + \beta_{1j} * (\text{MINORITY}_{ij}) + \beta_{2j} * (\text{ELEMENTA}_{ij}) + r_{ij}$$

$$(2) \text{ Level II: } \beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

### *One-way random effects ANCOVA*

For our Level II analysis of differences among schools we tested three contextual models. In Model 2 we entered our control variable (SES) and trust as Level II predictors of identification with school. In Model 3 we entered SES and Safety as Level II variables. For Model 4 (our final model) we entered SES, Trust and Safety into our level II analysis. Using student identification with school as our criterion variable the following is an example of our Level 1 and Level II structural equations for our final model.

$$\text{Level-I: ZSID}_{ij} = \beta_{0j} + \beta_{1j} * (\text{MINORITY}_{ij}) + \beta_{2j} * (\text{ELEMENTA}_{ij}) + r_{ij}$$

$$\text{Level-II: } \beta_{0j} = \gamma_{00} + \gamma_{01} * (\text{FRL}_j) + \gamma_{02} * (\text{ZSAFETY}_j) + \gamma_{03} * (\text{ZTRUST}_j) + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

## **Results**

The first level of investigation involved obtaining descriptive statistics of both the student and school variables. From there, correlational analyses were applied to explore the interrelationships among student identification with school, student trust in teachers and student perceptions of safety and our control variables. Finally, HLM was used to assess the individual and school effects of student trust and student perceptions of safety on student identification with school.

### *Descriptive analysis*

Descriptive analysis revealed several interesting patterns. In general, students who took the survey reported moderate levels of identification with school and trust in teachers. On a 5-point scale, the mean for identification with school was 3.77 (SD = .65) while the mean for trust in teachers score was 3.73 (SD = .92), and the mean level of perception of safety was 3.33 (SD = .70). On average, 61.32% of the students per school qualified for the free and reduced lunch programme, with a range from 22 to 97%. On average 71.75% of the students per school were African-American with a range from 29 to 100%. See Table 1.

### *Bivariate correlational analyses of student variables*

Bivariate correlational analyses confirmed Hypothesis 1 which stated that student trust in teachers, student perceptions of safety and student identification with school would covary. Student identification with school was positively correlated with student trust in teachers ( $r = .71, p < .01$ ) and student perceptions of safety ( $r = .56, p < .01$ ). It was negatively correlated with school level ( $r = -.38, p < .01$ ), indicating that identification with school declined as students progressed through school. Identification



Table 1. Descriptive statistics for student and school-level variables.

Variable	N	Mean	SD	Min	Max
<i>Student level</i>					
Identification with school	5441	3.77	.65	1.00	5.00
Perception of safety	5441	3.33	.70	1.00	5.00
Trust in teacher	5441	3.72	.92	1.00	5.00
African-American <sup>a</sup>	5441	.72	.45	.00	1.00
Elementary <sup>b</sup>	5441	.60	.49	.00	1.00
<i>School level</i>					
Identification with school	49	3.84	.28	3.29	4.36
Perception of safety	49	3.39	.30	2.90	4.17
Trust in teacher	49	3.85	.49	2.86	4.54
African-American <sup>a</sup>	49	.72	.22	.29	1.00
Elementary <sup>b</sup>	49	.72	.46	.00	1.00
% Free & reduced lunch	49	61.32	18.38	22.35	97.17

<sup>a</sup>African-American was dummy coded with 1 = African-American, 0 = Caucasian.

<sup>b</sup>Elementary was dummy coded with 1 = Elementary, Middle & High School = 0.

Table 2. Correlations among student-level and school-level variables.

	2	3	4	5
<i>Student level</i>				
1. Student Identification	.71**			
2. Student trust in teacher		.56**		
3. Student perception of safety		.57**	.41**	.03*
4. Elementary			.53**	-.03*
5. African Am. status			.26**	-.01
				.08**
<i>School level</i>				
1. Student identification	.96**			
2. Student trust in teacher		.83**		
3. Student perception of safety		.79**	.84**	.06
4. Elementary			.92**	.08
5. Percent F/R lunch			.54**	-.32*
				.30*

\* $p < .05$ ; \*\* $p < .01$ .  $N = 49$ .

with school was just slightly related to minority status ( $r = .03$ ,  $p < .05$ ); that it was statistically significant was undoubtedly due to the high power associated with the large sample size and not necessarily because this finding would have practical significance.

Student trust in teachers was positively correlated with student perception of safety ( $r = .57$ ,  $p < .01$ ) such that when students trusted their teachers they were more likely to feel safe and vice versa. Student trust in teacher was negatively correlated with school level ( $r = -.50$ ,  $p < .01$ ), meaning that student trust in teachers tended to decline as students moved through school. Student trust was slightly negatively correlated with ethnicity ( $r = -.03$ ,  $p < .05$ ), indicating that African-American students were slightly less likely to report trust in their teachers, again only statistically significant due to the high power of this large sample. Finally, student perception of safety was negatively associated with school level ( $r = -.23$ ,  $p < .01$ ), suggesting that students in the upper grades were less likely to feel safe. Student perceptions of safety were uncorrelated with ethnicity. See Table 2.

### Bivariate correlational analysis of school variables

In the next analyses, the student survey data were aggregated to schools and treated as school properties. Student identification with school was positively correlated with both student trust in teacher ( $r = .96$ ,  $p < .01$ ) and student perceptions of safety ( $r = .83$ ,  $p < .01$ ). Identification with school was negatively correlated with school level ( $r = -.78$ ,  $p < .01$ ) and was not correlated with the percent of students eligible for the free and reduced lunch programme. In addition, student trust in teachers was



positively correlated with student perceptions of safety ( $r = .79, p < .01$ ). The relationships between the variables of interest in our study, while significant at both the individual and school levels of analysis, tended to be stronger when the variables were treated as properties of the school. See Table 3.

**Hierarchical linear modelling**

To test Hypothesis 2 which stated that student trust in teachers and perceptions of safety are school properties that would be positively and significantly associated with differences between schools in student identification, we conducted multilevel modelling using HLM 7.

**Unconditional model: one-way ANOVA with random effects model**

The ICC from the fully unconditional model also known as the One-way ANOVA with Random Effects model was used to explore whether there was sufficient variability between schools to justify aggregation. First we assessed the ICC-1 and ICC-2 of our predictor variables. Large ICC-2s for student trust (.98) and student safety (.96) indicated strong within group agreement among students. The ICC-1 for trust (.41) and safety (.20) gave support to the claim that both student trust and perceptions of safety are school properties and further supported the collective nature of both of these variables. The ICC-1 for trust indicated that 41% of the variance between schools in student trust is accounted for by differences among schools. Additionally, 20% of the variation in student perceptions of safety is accounted for by differences among schools.

Next, we assessed the variability among schools in our dependent variable. The variation between schools as measured by the ICC-1 for identification with school was (.22,  $p < .01$ ) indicating that 22% of the total variability in identification with school can be attributed to school conditions whereas 81% of the variance in identification with school is at the individual student level. An ICC-2 of .97 indicated that there was strong within group agreement. We disagree with Adams (2014) conjecture that identification with school is an individual characteristic of students and not a school property. Unlike the results in his study our sample yielded a larger more significant ICC-1 and ICC-2 which we would argue are indicative of the possibility that identification with school is also a normative perception of students. This is in line with our theoretical conception of identification with school as being both an individual and collective property of students. However, for the purpose of our HLM analysis we specified identification with school at the individual level only.

See Table 3 for the results of our One-way Random Effects ANOVA model.

**Random coefficients regression model (null model)—Model 1**

For Model 1 we used a Random Coefficients Regression Model under Restricted Maximum Likelihood to test the effects of our Level I control variables Minority and Elementary status on our outcome variable (identification with school). In this model we added Minority status and Elementary status (grand mean centred) at level 1 as predictors of identification with school. Parameter estimates indicated that Minority status did not have a significant effect on identification with school ( $b = .03, p > .05$ ). However, elementary status did have a significant effect on identification with school ( $b = .81, p < .01$ ).

**Table 3.** Intraclass correlation coefficients.

Variable	ICC-1	$\chi^2$	ICC-2	F Ratio
Student trust	.41	2737.65**	.98	53.76**
Safety	.20	1114.65**	.96	22.20**
Student identification	.22	1471.58**	.97	28.93**

\*\* $p < .01$ ; \* $p < .05$ .



### One-way random effects ANCOVA (Models 2, 3, 4)

To test the effects of our school-level predictors on identification with school we conducted three One-Way Random Effects Analysis of Covariance (ANCOVA) models. In Model 2 we entered our school-level control variable percent free and reduced lunch (FRL) and student trust. In Model 3 we entered FRL and student perceptions of safety, and in Model 4, our final model we entered FRL and both of our predictor variables (student trust and safety). All variables were grand mean centred.

#### Model 2

Parameter estimates indicated that when FRL and student trust were entered in level 2 neither minority nor elementary status had a significant effect on student identification with school. We also note that FRL did not have a significant effect on student identification with school. Student trust was the only significant school-level predictor in this model ( $b = .49, p < .01$ ). A one standard deviation increase in student trust was associated with a .13 standard deviation increase in student identification. The deviance decreased from the null model by 106.69 points indicating that this model was a better fit than the previous model. However, the chi-square for the deviance statistic was not significant.

#### Model 3

Parameter estimates for Model 3 in which FRL and safety were entered as school-level predictor variables indicated that the level-one variable minority status did not have a significant effect on identification with school but elementary status did have a significant level-1 effect ( $b = .50, p < .01$ ). FRL did not have a significant effect on student identification. However, safety did have a significant effect ( $b = .23, p < .01$ ). A one standard deviation increase in safety was associated with a .02 standard deviation increase in identification with school. The deviance statistic decreased by 93.33 points from the null model indicating the previous model which included student trust as a school-level predictor had a better model fit.

#### Model 4

For our final model we added our control variable (FRL) and both predictor variables (student trust and safety) to the level-2 analyses. Parameter estimates indicated that only student trust ( $b = .35, p < .01$ ) and safety ( $b = .09, p < .05$ ) had significant effects on identification with school with student trust making the most significant contribution. Our level-1 control variables minority status and elementary status were both non-significant as was our level-2 control variable FRL. The deviance statistic while not significant decreased by 108.97 points from the null model indicating that our final model was the best fitting model. The chi square which tested the effects of our predictors (trust and safety) on identification with school was significant ( $\chi^2 = 68.71, p < .01$ ). This final model which included student trust and perceptions of safety as Level II predictors explained 98% of the 22% of variance in identification with school that is accounted for at the school level (See Table 4).

**Table 4.** Hierarchical linear model results for student identification.

Outcome variable	Student identification with school			
	Model 1	Model 2	Model 3	Model 4
Student predictors				
Minority status	.03	.06	.05	.05
Elementary status	.82**	-.18	.50**	-.03
School predictors				
%FRL	–	.0007	.002	.002
Trust	–	.49**	–	.35**
Safety	–	–	.24**	.09**
Deviance (–2 log likelihood)	14364.51	14315.88	14329.26	14313.60
$\Delta$ Deviance	58.06	106.69	93.31	108.97
Explained between school variability	79%	97%	95%	98%

Notes:  $n = 5441$  students,  $n = 49$  schools,  $\Delta$ Deviance is the difference between each model and the null model.

\* $p < .01$ ; \*\* $p < .01$ .



The findings of this analysis supported the hypothesis that student trust in teachers and perceptions of safety are both school conditions that are associated with variability in identification with school and account for significant variation between schools in identification with school. The effects of student trust in teachers and student perception of safety outweighed the effects of FRL and elementary school status. However, student trust in teachers made the most significant contribution to the explanation of variance in identification with school. We note that the explained variance when perceptions of safety was added to our structural model only increased by one percent from 97% when trust and FRL were the only variables added as Level II predictors to 98% when FRL, Trust and Safety were added as Level II predictors. While student perceptions of safety did have an a significant effect on identification with school, student trust in teachers made the most significant contribution to the explanation of the variance among schools in student identification with school and nearly explained almost all of the 22% of variance that is explained by school properties. H2 which stated that student trust in teachers and perceptions of safety are school properties that will be positively and significantly associated with differences among schools in student identification, was confirmed. Neither FRL nor minority status made significant contributions to the explanation of identification with school. Furthermore, the effect of school level (elementary status) which in the bivariate correlations was significantly associated with identification with school was no longer significant when trust and perceptions of safety were added to the structural model.

## Discussion

The hypotheses that guided this study proved to be powerfully supported. The first hypotheses that student trust in teachers, student perceptions of safety and identification with school would covary was confirmed, indicating that higher levels of trust and perceptions of safety were associated with increased identification with school. If schools hope to foster a sense of belonging and a value of schooling among their students, they would do well to consider methods to enhance student trust in teachers and student perceptions of safety. Student perceptions of trust and safety were also positively correlated. It is quite likely that when students trust their teachers they are more likely to feel safe, and when they feel safe at school they are more likely to trust their teachers. It would seem from these results that students expect their teachers to play a significant role in keeping them safe. Where students see teachers intervening effectively to prevent or to address bullying and other threats to student safety, they see the teachers as competent and trustworthy. Where teachers do not actively pay attention and respond appropriately to interpersonal dynamics among students, teachers do not earn the trust of their students.

The findings about the negative relationship between student identification and school level and student trust with school level are aligned with the findings from other studies that have examined these relationships (Fordham, 1996; Majors & Billson, 1992; Mitchell et al., 2008; Ogbu & Simons, 1998; Osborne, 1995, 1997; Steele, 1992, 1997). These findings pose a significant challenge to middle and high school teachers and school leaders as they work to support and improve student learning.

Our second hypothesis, which stated that student trust in teachers and perceptions of safety are school properties that would be positively and significantly associated with differences among schools in student identification, was also supported. Indeed, both perceptions of safety and student trust in teachers proved to be school conditions that significantly predicted differences in identification with school, above and beyond the effects of school level and minority status and SES. Minority status was only slightly correlated with identification with school in the bivariate correlational analysis at the individual student level. We suspected that this was due to the very large sample of students in this study. While it is likely that this was not indicative of a true relationship we kept minority status as a predictor in our Level I analysis because of mixed reports in the literature regarding the relationship between being African-American and identification with school. In fact, African-American and Caucasian students reported about the same degree of identification with school for the school in our sample. The poverty level of the schools was



not associated with differences between schools in identification with school. While there was a significant negative correlation between poverty and student identification, our predictor variables of student trust in teachers and student perceptions of safety explained 98% of the variance between schools in identification with school, over and above the effects of poverty, with student trust in teachers making the most significant contribution to the explanation of the variance in identification with school ( $b = .35, p < .01$ ) in our final model. This is the first study known to explore the relationship between student perception of safety and identification with school which also made a significant contribution to the explanation of identification with school ( $b = .24, p < .01$ ). While safety had a much smaller effect on student identification in our combined model, clearly, school safety has important consequence for student identification and is another area that administrators can focus on in their efforts to create a climate conducive to high levels of student identification with school.

### Limitations

Ethnicity did not significantly predict identification with school for the students in our sample. However, the schools in our sample were largely African-American which may have affected our ability to determine the importance of ethnicity for identification with school. It may be that because African-American students were the majority (approximately 70%) in the district under study, they were more easily able to feel that school was a place where they belonged and to value its importance. We are more confident in the finding that the poverty level was not related to identification with school for the schools in our sample because the percent free and reduced lunch ranged from 22 to 97%. But again, we take caution when interpreting this finding because we were unable to gather information regarding individual student SES. We also make note of the fact that a large number of surveys had to be eliminated due to incomplete survey responses and we acknowledge that this may have biased our results.

### Implications

This study looked at the relationship of student identification with school with student trust in teachers and student perceptions of safety. Both trust and safety proved to be school conditions that have important implications for student identification with school. While this study is just a beginning in unraveling the important effects of trust and safety on students' identification with school, it confirms our assertion that student-teacher relationships are vitally important and make a significant contribution to the cognitive and affective identification that students have with school as an institution. These results align with earlier findings of the association between student trust and identification with school (Adams, 2014; Mitchell et al., 2008).

### Directions for future research

This study makes a significant contribution to the scholarship on schools by including the perspectives of students, the clients whose work and well-being lie at the heart of the mission of schools. Future research should continue incorporating the voice of students where possible. Future studies should also seek to unravel the association between these variables and student achievement. Particularly as scholars search for malleable school factors under educators' control that have the potential to ameliorate the challenges posed by poverty to school success, the findings of this study suggest that this trio of variables are promising constructs for further study.

While our findings are similar to those of Voelkl (1997) more studies are needed to understand the relationship between ethnicity and identification with school. Although the findings in this study did not find ethnicity to be an important predictor of student identification with school, these results should be read with caution because of the limited variability of ethnicity in the school system studied.



Future studies that have more unevenly distributed ethnic groups may help to assess the effects of ethnicity on students' sense of belonging and valuing school.

### **Practical implications**

These findings suggest several recommendations for administrators who are interested in supporting students' identification with school. First, it is important to establish a climate of trust. Multiple studies have pointed to the important role of the principal in setting the tone of the school (Deal & Peterson, 2009; Leithwood, Harris, & Hopkins, 2008; Murphy, Smylie, Mayrowetz, & Louis, 2009). Tschannen-Moran (2004, 2014) discussed five functions that leaders can utilize to build trust in their schools, namely: visioning, modelling, coaching, managing and mediating. The principal as the visionary is responsible for championing the cause of building trusting relationships between all parties in schools. Not only are principals responsible for being the torchbearer for trust, they also need to consistently model trustworthy behaviour. As the coach, the principal must engage in supervision of instruction in such a way as to inspire collaboration and collegiality. As the manager, the principal must earn trust through the equitable distribution of resources. As the mediator, the principal must be knowledgeable about the process of trust repair and willing to take the necessary steps to repair broken trust. Similarly, Gimbel (2003) suggested that to inspire teachers to trust, principals need to act fairly, be consistent, demonstrate follow through, solicit input, praise and recognize their efforts, be reliable, lead collegially, respect teacher opinions and professionalism, be considerate and be willing to admit mistakes. But what should principals do to inspire student trust? Parallels can be drawn between the kind of behaviours on the part of principals and teachers that will encourage students to risk trusting. As with teachers, students need to feel respected, supported and to sense that teachers and principals have their best interest at heart.

Our findings reinforce the importance of intentionally tracking and addressing malleable school and classroom-level factors that relate to student identification with school. Improving student performance in school depends on more than simply increasing instructional hours and rigour; it requires nurturing the quality of relationships in classrooms and throughout the school. Students whose psychological and emotional well-being suffer due to low-quality relationships at school do not learn all that we hope they will learn. Policies such as No Child Left Behind that place inordinate attention on test performance without also encouraging and holding schools accountable for safe and engaging climates, misdirect and distract educators from the very leverage points that serve continuous learning and improvement. Principals who understand this will facilitate their staffs' engagement with evidence that paints a more complete picture of school performance (Kowalski, 2009).

In addition to expanding attention beyond test score performance, school leaders need to cultivate the conditions that facilitate trust among the teachers and between students and teachers (Wahlstrom & Louis, 2008). Trusting relationships serve as the foundation for open communication and information sharing. Where teachers trust each other, they are more likely to collaborate (Tschannen-Moran, 2001, 2014) and develop strategies for addressing school safety issues. Trusting relationships between teachers and students will be more likely to result in students sharing critical information with teachers about chronic acts of bullying and incivility as well as more severe risks for major acts of violence (Borum, Cornell, Modzeleski, & Jimerson, 2010). The fact that identification with school tends to wane as students move through school and the fact that student trust seems to ameliorate the negative effects of school level points to the importance of early intervention in establishing trusting relationships and the need for middle school and high school administrators to place an emphasis on establishing a climate of trust.

While there are no easy answers to the problems associated with school failure, delinquency, under-performance and dropout, focusing exclusively on high stakes testing and accountability, without an emphasis on establishing a positive climate of trust and safety, cannot be the sole solution. Increased identification with school lowers the risk of delinquency and school dropout (Wehlage, 1989). The results of this study offer promising new evidence for administrators and educators who are seeking



to create an environment that is conducive to student identification with school. Establishing a climate of trust and safety may be a powerful way to engage students and support the learning of all students and particularly of those who are at risk for school failure.

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**Megan Tschannen-Moran** is Professor of educational leadership at the College of William and Mary. Her research on trust in schools explores how teacher, student, principal and parent trust is related to important outcomes, such as teacher professionalism, academic press and student achievement. Her books *Trust Matters: leadership for Successful Schools*, as well as *Evocative Coaching: Transforming Schools One Conversation at a Time* (co-authored with her husband, Bob), bring these theories to a practitioner audience.

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