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POSTDOCTORAL STUDIES**

Tanuja Christine Miura

AUTEUR DE LA THÈSE / AUTHOR OF THESIS

M.A. (Educational Counselling)

GRADE / DEGREE

Faculty of Education

FACULTÉ, ÉCOLE, DÉPARTEMENT / FACULTY, SCHOOL, DEPARTMENT

**School Climate:
Development of a Comprehensive Definition**

TITRE DE LA THÈSE / TITLE OF THESIS

David Smith

DIRECTEUR (DIRECTRICE) DE LA THÈSE / THESIS SUPERVISOR

CO-DIRECTEUR (CO-DIRECTRICE) DE LA THÈSE / THESIS CO-SUPERVISOR

Nick Gazzola

Tracy Vaillancourt

Gary W. Slater

Le Doyen de la Faculté des études supérieures et postdoctorales / Dean of the Faculty of Graduate and Postdoctoral Studies

School Climate: Development of a Comprehensive Definition

Tanuja C. Miura

Faculty of Education

University of Ottawa

This thesis is submitted as a partial fulfilment of the

M.A. program in Educational Counselling

Submitted: April 21, 2010

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Your file *Votre référence*
ISBN: 978-0-494-65952-6
Our file *Notre référence*
ISBN: 978-0-494-65952-6

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Acknowledgements

My sincerest thanks and appreciation are extended to my supervisor, Dr. David Smith, for his unfailing patience, support, and advice in completing this project. From the formative stages, to the final draft, his guidance has made this thesis possible. I would also like to thank the members of my committee Dr. Nick Gazzola and Dr. Tracy Vaillancourt for their ongoing encouragement and feedback throughout the process. In addition, I extend my gratitude to Dr. Wendy Ryan for her collaboration in the conducting the synthesis and analysis of the literature and to Christine Blain-Arcaro for participating in the pre-testing process. Finally, I would like to acknowledge the contribution of Ada Aizenberg in collecting data for the literature review.

I am also grateful for the financial support provided by a Joseph-Armand Bombardier Canada Graduate Student Master's Scholarship granted by the Social Sciences and Humanities Research Council.

On a personal note, I would like to thank my parents for their love and unending support. They taught me that no task is too daunting if it's done one step at a time. Thank you to my daughter, who has shown me that I am capable of far more than I ever thought, even on a limited amount of sleep. Finally, I would like to give a special thank you to my husband, who inspires and motivates me every day and reminds me that the best kind of knowledge to acquire is that which is learned for its own sake.

To each of the above, I extend my deepest appreciation.

Dedication

This thesis is dedicated to memory of Reena Virk and of Dawn-Marie Wesley, and to the hope that awareness will bring about change.

Abstract

School climate is a complex and multidimensional construct that is an essential part of the school experience. Currently, there is no clear consensus on its definition or what specific dimensions it encompasses. The purpose of this study was to examine various ways that school climate has been defined in empirical studies and to establish consensus on the factors essential to the construct. To this end, we conducted a synthesis and analysis of school climate research followed by a Delphi poll in order to reach consensus among participating experts. Results indicated that school climate should be considered based on three interrelated dimensions: individual, interpersonal, and organizational, as well as various sub-dimensional components. Participants prioritized: (1) factors related to students and teachers, including their relationships; and (2) factors related to the school's philosophy, such as policies and disciplinary climate. Findings of the study may be used to develop a comprehensive school climate scale for assessing school improvement programs and initiatives.

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School Climate: Development of a Comprehensive Definition

Statement of the Problem

School climate is a complex and multidimensional construct that is an essential part of the school experience. Research has shown that positive school climate has been associated with fewer behavioural and emotional problems for students (Kuperminc, Leadbeater, & Blatt, 2001), less delinquency and student victimization (Gottfredson, Gottfredson, Payne, & Gottfredson, 2005), students' smooth and easy transition to a new school (Freiberg, 1998), a higher degree of academic success experienced by students (Goddard, Sweetland, & Hoy, 2000; Haynes & Comer, 1993; Haynes, Emmons, & Ben-Avie, 1997; Hoy, Hannum, & Tschannen-Moran, 1998; Hoy & Sabo, 1998; Johnson & Stevens, 2006), and increased job satisfaction for school personnel (Taylor & Tashakkori, 1995).

Although a growing body of research has deemed positive school climate as beneficial and essential in yielding positive educational and psychological outcomes for students and school personnel, there is no consensus about what the term means and what sub-dimensions it encompasses. Hundreds of studies have defined school climate in a variety of different ways and have employed numerous different measures of school climate, each measuring a distinct set of dimensions (e.g., Derosier & Newcity, 2005; Gottfredson et al., 2005; Haynes et al., 1997; Vieno, Perkins, Smith, & Santinello, 2005). Many of these school climate measures have been developed and used only for a specific research project, and they are rarely re-employed in subsequent studies. Thus, it has not been possible to assess the long-term validity of any one school climate measure. Similarly, the absence of a standard measure of school climate precludes cross-study comparisons or meta-analyses that function to consolidate the current state of knowledge within the field.

School administrators, teachers, students, parents, and community members have a vested interest in schools operating with a positive climate. Schools strive to provide ideal learning environments for their students, and positive school climate is viewed as a key factor contributing to successful student outcomes (Stewart, 2008). Since there is no widely accepted definition of the school climate construct at this time, and in turn, a lack of standard assessment tools to measure school climate, this has led to the proliferation of many unvalidated scales. From an educator's perspective, the literature supports the importance of positive school climate and advocates use of measures of school climate as predictors of school effectiveness (Witcher, 1993). For example, McEvoy and Welker (2000) concluded that the success of programs for the prevention of academic failure hinges on the ability to identify and modify school climate. Thus, the existence of multiple scales might be contributing to the slow progress of school improvement initiatives. In particular, failure to account for school climate may be a contributing factor to the limited success of many bullying prevention initiatives (Smith, 2006).

Bullying is a serious problem in Canadian schools (Craig & Pepler, 1997; Craig, Peters, & Konarski, 1998). Although bullying prevention programs are implemented widely (they were required by law in all Ontario schools as of September 2006), there is only limited evidence supporting their effectiveness (Ferguson, San Miguel, Kilburn, & Sanchez, 2007; Merrell, Gueldner, Ross, & Isava, 2008; Smith, Schneider, Smith, & Ananaiadou, 2004; Vreeman & Carroll, 2007). Many researchers have identified school climate as a factor that is associated with school violence and bullying (e.g. Gottfredson et al., 2005; Kasen, Berenson, Cohen, & Johnson, 2004; Swearer et al., 2006). Furthermore, it has been suggested that one possible reason for the limited success of many bullying prevention programs may be the failure to account for the

impact of school climate as a key variable mediating the effects of bullying prevention programs on bullying outcomes (Smith, 2006).

The aforementioned studies reflect and support the growing consensus that school violence, including bullying, should be treated as a multiply determined phenomenon (Fraser, 1996; Goldstein, 1994; Hellman & Beaton, 1986; Welsh, Greene, & Jenkins, 1999). Furthermore, they illuminate the need to properly address the inconsistent outcomes in the bullying prevention literature and to investigate potential mediating factors such as school climate. Given the laudable goal of reducing violence in the schools and the significant financial and research effort devoted to developing bullying prevention programs, this need is particularly salient.

Objectives

Currently, there is no clear consensus on what specific dimensions constitute the school climate construct (Anderson, 1982; Van Houtte, 2005). Yet, research indicates that school climate contributes to the quality of peer interactions within the school community. Furthermore, improved school climate is an outcome of school improvement initiatives, such as bullying prevention programs. It is critical that valid standardized measures of key constructs like school climate be developed so that effectiveness of these programs may be accurately gauged. This, in fact, is the mission of the recently established network called PREVNet (*Promoting Relationships and Eliminating Violence Network*) funded by the Networks of Centres of Excellence of Canada (2006): to develop valid assessment instruments and evidence-based interventions to reduce bullying and victimization and promote positive, healthy relationships among children. Given the hypothesized importance of the school climate construct in relation to bullying prevention, it becomes important to develop a clear operational definition and a list of

items appropriate for measuring school climate that researchers in this field can agree upon. As a first step toward forming this new measure, a consensus on the meaning of school climate must be established. Accordingly, my research project will yield an empirically based, coherent definition of the school climate construct, as well as a comprehensive list of dimensions that should be incorporated into a valid measure of school climate.

Literature Review

Bullying Prevention Program Evaluation

Bullying prevention programs are widely implemented, however there is only limited evidence supporting their effectiveness (Ferguson et al., 2007; Merrell et al., 2008; Smith et al., 2004; Vreeman & Carroll, 2007). One of the pioneering studies that demonstrated the potential of bullying prevention interventions to be effective was the Olweus Bullying Prevention Program (Olweus, 1993). This program was the first comprehensive whole-school intervention implemented on a large scale and systematically evaluated. It was designed to help identify students displaying bullying behaviour, in elementary, middle, and high schools, and to help them as well as their victims cope with the effects of this type of school violence (Olweus, 1991). Within the Olweus approach, basic information is provided to all members of the school community, including staff, students, and parents, about what bullying is and the appropriate way to respond to it. A clear and consistent bullying prevention policy must be developed and implemented. The program includes regular communication between the school and parents, and communication among the staff members, who are instructed to supervise children's interactions actively and consistently. Curricular activities are designed to inspire anti-bullying attitudes in all students and assist them in developing prosocial conflict resolution skills. Finally interventions

are developed on an individual basis for students directly involved in bullying as either victims or bullies (Olweus, 1991; Smith et al., 2004).

The initial prevention program was carefully evaluated in a large-scale project involving 2,500 students from forty-two schools followed over a period of two and a half years (Olweus, 1999). Results of the study revealed reductions of 50% or more in student reports of being bullied and bullying others. There were marked decreases in student reports of general antisocial behaviour, such as vandalism, theft, fighting, and truancy, and clear improvements in the classroom social climate, as reflected in students' reports of improved order and discipline, more prosocial relationships, and more positive attitudes toward school.

Despite the encouraging findings of this early work, there subsequently have been few studies that have demonstrated bullying prevention programs to be effective. Smith et al. (2004) quantitatively synthesized the results of 14 evaluation studies of whole-school bullying prevention programs that shared properties of the influential Olweus Bullying Prevention Program (Olweus, 1993). Smith et al.'s synthesis revealed that outcomes in nearly all studies (the original Olweus program being the only exception) were negligible (i.e., effect size $r \leq .09$) or negative. These authors suggested several possible explanations for the lack of effectiveness in the evaluation findings; for instance, the authors proposed that the high quality of Scandinavian schools might have contributed to the positive outcomes of the original Olweus program. Furthermore, the historical context of the Olweus program introduction, which took place in the wake of several highly publicized suicides that were linked to bullying in the media (Olweus, 1993), may also have contributed to the original program's success by increasing the urgency of and commitment to program implementation.

Ferguson et al. (2007) conducted a meta-analytic review of school-based bullying prevention programs based on 42 experimental studies which meet certain criteria related to “best practice” methodology. Their analysis focused on effect size and the confidence interval around effect size to determine an estimate of the true impact of violence prevention programs in the school-based population, rather than the achievement of statistical significance. Furthermore, they included a rigorous analysis of publication bias, which they defined as the tendency for journals to publish articles with statistical significance more often than articles that do not obtain significance, to ascertain whether the effect of school-based prevention programs may be inflated. The study concluded that bullying prevention programs produce an effect that is positive and statistically significant, but practically negligible (i.e., $r = .10$). This suggests that school-based bullying prevention programs in their current form are not practically effective in reducing bullying or violent behaviours in schools.

Vreeman and Carroll (2007) reviewed the outcomes of 26 evaluation studies of school-based interventions to decrease bullying. The types of interventions reviewed included curriculum, whole-school, social skills, mentoring, and social worker support. About half of these programs yielded some positive outcomes, and the remaining yielded null or negative results. Interestingly, somewhat better results were found for whole-school interventions which address bullying as a systemic problem and are directed at different levels of the school organization (i.e., individuals, peer groups, classrooms, teachers, and administration) compared to the other types of interventions studied.

Despite the reasonable evidence suggesting the value of whole-school interventions, perhaps this systemic approach is still not broad-reaching enough. A possible explanation to account for this limited success may be the failure of many bullying prevention programs to

account for the impact of school climate on bullying and victimization. Increasingly, the potential impact of school climate as a key variable mediating the effects of bullying prevention programs on bullying outcomes is being considered as a possible explanation (Smith, 2006), although this hypothesis has not yet been tested empirically. For example, it has been suggested that an authoritarian and punitive approach to classroom management and discipline may hinder the effectiveness of bullying prevention programs (Smith, 2006). This component of school climate is one that seldom considered in bullying prevention program evaluation. In order to thoroughly explore such a hypothesis, it becomes critical to develop valid standardized measures of key constructs so that effectiveness of these bullying prevention programs may be accurately gauged.

Relationship between Bullying and School Climate

Researchers have identified school climate as a factor that is associated with school violence and bullying (e.g., Gottfredson et al., 2005; Kasen et al., 2004; Swearer et al., 2006). Furthermore, many studies have emphasized the importance of developing a positive school climate to reduce school violence (e.g., Colven, Tobin, Beard, Hagan, & Sprague, 1998; Dwyer, Osher, & Hoffman, 2000; Fraser, 1996; Khoury-Kassabri, Benbenishty, Zeira, & Astor, 2004; Stephens, 1994). Kuperminc et al. (2001) suggested that school climate might, in itself, serve either as a protective factor or risk factor in students' lives. Fittingly, several school violence researchers have argued for more detailed studies that explore the context of the school, including the role of school social/organizational dynamics, on bullying and school victimization (Astor & Meyer, 2001; Astor, Meyer, & Behre, 1999; Baker, 1998; Furlong & Morrison, 2000; Hawkins, Farrington, & Catalano, 1998; Hyman & Snook, 2000; Morrison & Skiba, 2001; Nansel et al., 2001; Nogeura, 1995).

One of the benchmark studies relating school violence to dimensions of school climate was the Safe School Study by the National Institute of Education (1978). Using questionnaires, data were collected from students, teachers, and principals from 642 public schools in the United States. Community data from each school were also obtained from the 1970 census. The institute's report concluded that school administration and policies make a significant difference in rates of victimization. In a re-analysis of the Safe School Study data, Gottfredson and Gottfredson (1985) related victimization to various aspects of school climate. Schools with the worst discipline problems were schools where the rules were unclear, unfair, or inconsistently enforced. Other major factors related to high levels of victimization included inadequate resources for teaching, poor teacher-administration cooperation, inactive administrations, and punitive attitudes on the part of teachers.

Subsequent research has shown that aspects of school climate, such as professional climate, school policies, rules, and norms, student-teacher relationships, and student engagement, may contribute to school violence. Roland and Galloway (2002) found that poor leadership, little professional cooperation, and low consensus about professional matters, characterized schools with the highest levels of bullying compared to schools with less bullying. Khoury-Kassabri et al. (2004) found that students reported lower levels of victimization when they perceive that the school policy included clear, consistent, and fair rules and that there are positive student-teacher relationships and high student participation in decision-making. Likewise, Griffith (1999) reported that perceptions of the school as orderly and fair with positive student-teacher relationships have been found to moderate self-criticism and internalizing and externalizing problems. Classroom norms regarding aggression and bullying can also have a powerful impact on students' tendencies to exhibit aggressive behaviour (Rodkin & Hodges, 2003). For example,

teachers may unintentionally encourage bullying by ignoring aggressive behaviour or failing to encourage respectful interactions among students (Espelage & Swearer, 2003; O'Moore, 2000).

In addition, research has indicated that students who are actively involved in school and feel a sense of personal connection with peers and staff at school are less likely to engage in aggressive behaviour (Karcher, 2004).

School climate has been hypothesized as a critical factor in the emergence of violent delinquency. The extent to which the students feel safe and connected and value academic success may influence the development of problem behaviour above and beyond individual risk factors. For example, Crooks, Scott, Wolfe, Chiodo, and Killip (2007) studied the influence of individual-level risk factors and school-level variables assessed at the beginning of grade 9 on delinquency 4 to 6 months later. After taking students' individual risk factors into account, they found that students were less likely to engage in violent delinquency if they attended schools that they perceived as having a greater climate of safety. Kasen, Johnson, and Cohen (1990) examined the relationship among four dimensions of school climate (i.e., school conflict, social facilitation, academic focus, and student autonomy) and behavioural, emotional, and alcohol use problems in 9 to 16 year old students during a 2-year period. Controlling for prior syndromes, they found that variables related to conflict (student-student, student-school, and student-teacher) and academic focus influenced psychopathology, including opposition and conduct problems, in students. Furthermore, research has also shown that a student body that experiences low connection to school promotes the incidence of delinquency, academic failure, and dropout (Sprague, Walker, Stieber, Nishioka, & Wagner, 2001; Tobin & Sprague, 2000).

Malecki and Demaray (2003) studied another aspect of school climate, examining the relationship between carrying weapons and student perception of social support among 461

middle school students. They found that students who carry weapons to school perceived that they have lower levels of social support than students who did not carry weapons to school (also see Powell, 1997). Khoury-Kassabri, Astor, and Benbenishty (2007) showed that school policies that include clear, consistent, and fair rules predict lower levels of carrying weapons to school. These results are in agreement with those of Hawkins et al. (1992) that higher levels of bonding to family and school are associated with lower levels of drug use and delinquent activity.

Conceptualization of School Climate

A number of comprehensive reviews have been conducted that reveal that school climate is a multidimensional construct (Anderson, 1982; Van Houtte, 2005). Anderson's (1982) review represents the most thorough examination to date of the construct of school climate. She identifies Tagiuri's (1968) typology as the most comprehensive conceptualization of school climate, which includes the following categories: (1) ecology (physical/material aspects); (2) milieu (characteristics of the population); (3) social system (patterns of relationships); and (4) culture (value and belief systems). Anderson then presents an overview of the dimensions of school climate measured by researchers in 40 major school climate studies and organizes them according to Tagiuri's categories. Examples of ecology variables include building characteristics and school size. Milieu variables include teacher characteristics, student body characteristics, as well as teacher and student morale. Some examples of social systems variables include administrative organization, instructional program, teacher-administrator rapport, community-school relationships, teacher-student relationships, and principal's involvement in instruction. Finally, culture variables include teacher commitment, student norms, expectations, and emphasis on academics. By mapping these variables onto Tagiuri's categories, Anderson illustrates that most researchers measure within the social system and culture dimensions

exclusively. She concluded that existing measures of school climate tend to focus on only a few dimensions and fail to capture the full breadth of the construct.

Anderson's (1982) article highlights the complexity of the school climate construct, revealing that it has been studied with a multitude of different variables, methodologies, theories, and models. Interestingly, over 20 years since her seminal review, consensus and clarity are still lacking in the literature. On the one hand, there is overlapping of scale items between measures of school climate and measures of other constructs, such as school connectedness (Wilson, 2004); interpersonal conflict (Kasen, Cohen, & Brook, 1998); bullying (DeRosier & Newcity, 2005); safety (Furlong, Greif, Bates, Whipple, & Jimenez, 2005); and school bonding (O'Farrell & Morrison, 2003). On the other hand, school climate measures themselves contain a vast range of differing dimensions. For example, Haynes et al. (1997) identified the following components of a school climate: achievement motivation, collaborative decision making, equity and fairness, order and discipline, parent involvement, school-community relations, staff dedication to student learning, staff expectations, leadership, school building, sharing of resources, caring and sensitivity, student interpersonal relations, and student-teacher relations. Alternatively, DeRosier and Newcity (2005) operationalize the school climate construct based solely on children's perceptions of the prevalence of specific interpersonal character traits such as caring and cooperation; and intrapersonal character traits including responsibility and citizenship.

A recent review by Van Houtte (2005) concluded that the construct of school climate refers to the organization in its entirety, including the shared beliefs and the characteristics of the individuals and groups participating in the organization, the relations between individuals and groups in the organization, and the physical surroundings. He revealed the same weakness that was identified by Anderson (1982): that the existing measures of climate usually focus on only

one dimension, and seldom are different dimensions brought together to capture the full scope of school climate. Furthermore, many researchers who claim to be measuring school climate fail to provide a clear definition of the construct (e.g., DeRosier & Newcity, 2005; Furlong et al., 2005).

Researchers at the Yale Child Study Center School Development Program (Haynes et al., 1997) have published the following list of components characterizing a “healthy supportive school climate”: achievement motivation, collaborative decision making, equity and fairness, order and discipline, parent involvement, school-community relations, staff dedication to student learning, staff expectations, leadership, school building, sharing of resources, caring and sensitivity, student interpersonal relations, and student-teacher relations (pp. 326-327). Although their definition is quite comprehensive, not all of these components are measured in each of their four versions of the *School Climate Survey* (Emmons, Haynes, & Comer, 2002). For example, the elementary/middle school student version measures only fairness, order and discipline, parent involvement, sharing of resources, student interpersonal relations, and student-teacher relations. The high school version is the same as the elementary/middle school version except it has items measuring perceptions of the school building but not fairness. The staff version measures achievement motivation, collaborative decision-making, equity and fairness, leadership, order and discipline, school building, school/parent/community relations, staff dedication to student learning, and staff expectations; while the parent version measures academic focus, achievement motivation, principal caring and sensitivity, collaborative decision-making, parent involvement, school building, school-community relations, and student-teacher relations. Although these authors present school climate as a single construct, it would appear that different dimensions are being measured depending on who is the intended respondent.

In her review, Anderson (1982) describes nine major school climate instruments, all of which are quantitative (i.e., surveys). Out of the 40 major studies reviewed, only eight include qualitative measures of school climate such as interviews or observations. There are still very few researchers using qualitative methods of measuring school climate. Freiberg and Stein (1999) describe some qualitative methods such as student drawings, teacher journals, and cafeteria observations, but acknowledge that school climate researchers rarely use these. This may be because the term “culture” instead of “climate” is more commonly used by researchers who employ more qualitative methods (Hoy, Tarter & Kottkamp, 1991; Schoen & Teddlie, 2008).

School climate versus school culture. The terms school climate and school culture have sometimes been used interchangeably in the school effectiveness literature (Van Houtte, 2005). However, some authors have made a clear distinction between the two constructs. Van Houtte viewed culture as a suitable concept for examining a school’s cognitive structures. He argued that climate should be reserved for examining the school in its entirety. In Van Houtte’s conceptualization, school climate, being a multidimensional construct, encompasses culture. In contrast, Schoen and Teddlie (2008) presented a theoretical framework for school culture that views school climate as one of the levels of school culture. Hoy and Feldman (1999) make a distinction between climate as “shared perceptions of behaviour” and culture as “shared assumptions, values and norms” (p. 85). Hoy et al. (1991) explain that studies of climate usually have their intellectual roots in psychology and tend to use quantitative research methods such as surveys and multivariate statistics, whereas studies of culture usually come from anthropology or sociology and use ethnographic methods.

Gruenert (2008) argued that although school climate and school culture have some similar characteristics, they represent two separate concepts. He describes school climate as the attitude of the school based on perceptions and school culture as the school's personality grounded in values and beliefs. As such, Gruenert views climate as a major influence on culture, suggesting that if school leaders want to shape a new culture, they should start with an assessment of the climate. Furthermore, if the climate is ineffective, there are probably climate issues that need to be dealt with. Gruenert argues that school climate is flexible, while school culture takes many years to evolve. Therefore, it is much easier to change an organization's attitude (or climate) than it is to change its personality (or culture). He concludes that once educators understand the difference between climate and culture, they will develop the capacity to be more precise in their diagnosis and treatment of the two. Therefore, it appears that although school climate and school culture are sometimes used interchangeably, conceptually they are not the same thing and should be viewed as distinct.

School-level factors. Some definitions of school climate have focused on school-level characteristics such as school policies, the disciplinary climate, safety, academic orientation, or the physical environment. For instance, Gottfredson et al.'s (2005) 56-item school climate scale comprises the following dimensions: fairness of rules, clarity of rules, organizational focus, morale, planning, and administrative leadership. Locally, the Ottawa-Carleton District School Board has a School Climate Survey (www.ocdsb.edu.on.ca) that consists of 100 items and encompasses the following dimensions: caring and respectful environment; safe and secure environment; effective discipline procedures; focus on teaching and learning; equity, fairness, and understanding; desirable behaviours taught; supportive strategies; therapeutic approach; staff development, roles, and relationships; and positive school-community relations. Several school

climate scales emphasize the importance of instructional variables, such as an emphasis on academic press (e.g., Crooks et al., 2007; DiPaola, Tschannen-Moran, 2001; Koth, Bradshaw, & Leaf, 2008). Bomotti, Ginsberg, and Cobb (1999) included three composite variables related to academics in their study: collective responsibility for teaching and learning, emphasis on academic learning, and school rewards students for high achievement. Other assessments of school climate include variables focusing on the physical environment of the school, including the maintenance of the school building and grounds (Birnbaum et al., 2005; Esposito, 1999) or the availability of materials and resources (Billingsley, Carlson, & Klein, 2004).

Individual-level factors. Some researchers have conceptualized school climate in terms of the characteristics of persons and groups within the school environment, including students, teachers, administration, and parents. Specific assessment tools that have considered school climate in terms of the behaviours and characteristics of students themselves include DeRosier and Newcity's (2005) School Climate Survey which measures student's perceptions of the prevalence of specific interpersonal behaviours (i.e., caring, civility, cooperation, friendship, problem-solving, and tolerance) and intrapersonal traits (citizenship, courage, diligence, honesty, responsibility, and self-control). Brookmeyer, Fanti, and Henrich, (2006) operationalized school climate to measure students' feelings of connectedness to their school on a seven-item scale. Corten and Dronkers (2006) considered student factors such as absenteeism, disruption of classes, skipping of classes, and substance use/abuse in their assessment of school climate. Finally, Vieno et al. (2005) limited their definition of school climate to the democratic character of a school as perceived by the students, which they measured on a five-item scale.

Other definitions have conceptualized school climate in terms of the behaviours and characteristics of school staff, including teachers and/or administration. For instance,

administrator leadership style was assessed as a measure of school climate by several researchers (e.g., Gaziel, 2004; Sterbinsky, Ross, & Redfield, 2006). Corten and Dronkers (2006) measured teacher-related factors including teacher absenteeism and frequency of changes in teaching staff. Hoy and Clover (1986) developed a 50-item descriptive questionnaire that measures openness of the school climate through three dimensions of principal behaviour (supportive, directive, and restrictive) and three dimensions of teacher behaviour (collegial, committed, and disengaged).

Still other researchers have considered behaviours and characteristics of parents as integral to the concept of school climate. For example, both Ma (2003) and Haynes et al. (1997) included the variable of parent involvement in their definition of school climate.

Social factors. One of the fundamentally important aspects of school climate is relational and how connected people feel to one another within the school community. Accordingly, school climate has also been defined in terms of the quality and patterns of relationships among and between teachers, students, administration, parents, and the community at large. Furlong's (1996) California School Climate Survey, which has subsequently been used in several other studies of school climate (e.g., Astor, Benbenishty, Vinokur, & Zeira, 2006; Furlong, Casas, Corral, Chung, & Bates, 1997) included a subscale, which assessed teachers' and staffs' supportive relationships with students. Vuilr and Schenkel (2001) included the variable of students' relationships with teachers and peers in their definition of school climate. Alternatively, Griffith (2004) defined school climate in terms of parent-school relationships, including such variables as the extent to which the parent is made to feel welcomed, the office staff is courteous to the parent, and the teachers and principal are interested and cooperative when discussing the parent's child. Sava's (2002) 36-item school climate questionnaire assessed teachers' perceptions of principal and colleagues' support. Finally, Hanna (1998) considered teacher-student

relationships, student-peer relationships, and parent and community-school relations in their definition of school climate.

In summary, these examples illustrate the diversity of conceptual and operational definitions of school climate. It is therefore not surprising that there is no standard method to assess a school's climate. A large number of instruments are currently being used to assess school climate. It appears that each assessment method considers different factors and individuals within the school system. Currently, there is no consensus on the meaning of school climate in the literature, and until a consensus is developed, research into school improvement programs, such as bullying prevention programs, will be significantly hindered.

Conceptual Framework

It is widely accepted that social environments, like schools, have direct and life-long effects on human development (Lerner, 2002; Lerner & Korn, 2000). Along these lines, it has been demonstrated that that schools influence children's intellectual and social development. Work presented in two comprehensive reviews has outlined evidence supporting the idea that there are significant differences among schools with regard to children's academic and psychosocial outcomes, which are not solely explained by student characteristics (Rutter, 1983; Rutter & Maughan, 2002). Furthermore, a rigorous study found that even after controlling for individual and family characteristics, schooling accounts for a significant portion of variance (approximately 8%) in students' academic and psychosocial outcomes (Scheerens & Bosker, 1997).

The conceptual framework underlying this proposal is based on Bronfenbrenner's (1979) ecological model of development, which emphasizes that development unfolds over time through exchanges between individuals and their dynamic social contexts. Bronfenbrenner proposed a

strong environmental view in which the contexts that influence development are organized as multilevel nested systems, with bi-directional influences within and between them. These environmental contexts vary in their proximity to the developing individual. The closest and most influential system is called the microsystem, and includes the family, school, neighbourhood, and peer group. “Proximal processes” drive development within the environmental contexts. These include both interactions between individuals, as well as interactions between individuals and objects that populate their environments (Bronfenbrenner & Morris, 2006, p. 797). Other systems that affect development in the Bronfenbrenner model include the mesosystem, which involves relationships or connections between the people and institutions in an individual’s microsystem (e.g., the relation of family experiences to school experiences), and the macrosystem, which is the most remote system and encompasses the larger cultural context. In addition, the exosystem is involved when experiences in another social setting – in which the individual does not have an active role – influence what the individual experiences in an immediate context. For instance, teachers’ relationships with the school administration might affect students’ academic outcomes.

Within the Bronfenbrenner (1979) ecological model, I envision school climate as an influential developmental construct that encompasses dimensions ranging from the fine-grained inputs of direct interactions with social agents (e.g., student-student or student-teacher relationships) to the broad-based inputs of culture (e.g., school institutional integrity or school values) (see Figure 1). Bronfenbrenner places school within an individual’s microsystem, meaning that it is among the most influential social contexts that contribute to an individual’s

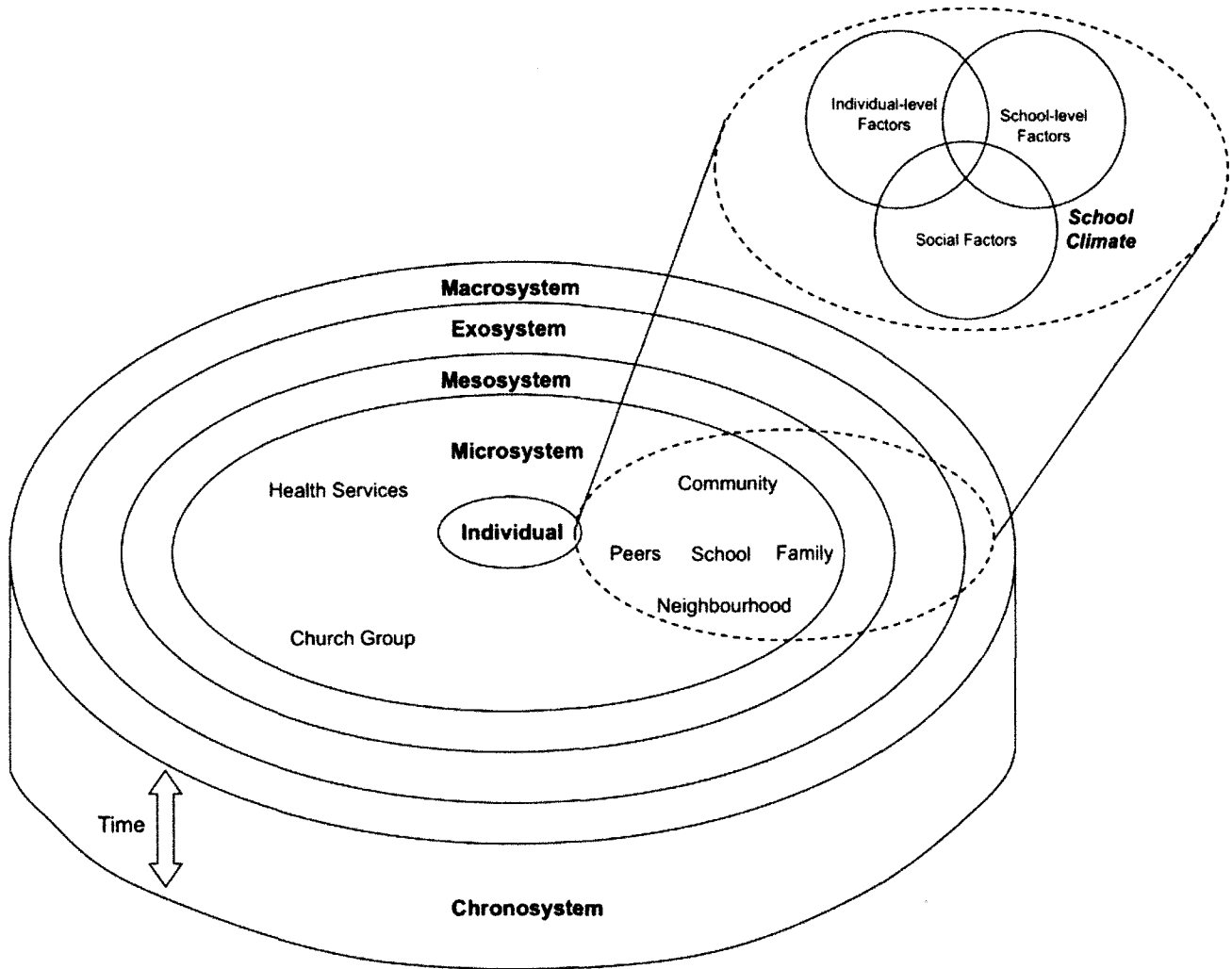


Figure 1. The conceptual framework. Adapted from *Child Development*, 7th Ed. (p. 51), by J. W. Santrock, 1996, Madison, WI: Brown & Benchmark.

development. To build upon this conceptualization, school and its impact on an individual's development is influenced by a number of factors that span all of Bronfenbrenner's environmental contexts. This multi-dimensional system is the school climate. School climate is highly dependent upon the relationships and interactions between individuals that populate the school community. It is also influenced by the larger cultural context, meaning that schools, rather than existing in isolation, are closely linked to the culture and society in which they exist. This affects the philosophical and ideological underpinnings of a school's policies and values. All of these contexts interact and influence one another to determine school climate. In addition, components of school climate often directly impact an individual's development, yet may be determined entirely by factors outside that individual's influence.

Consequently, researchers, school administrators, teachers, parents, and community members committed to improving the contexts of development for children can positively influence their life course. School climate is clearly a broad-reaching and influential developmental context that provides the kinds of interactions and experiences that foster development.

Research Questions

The proposed study is constituted by two consecutive phases. The questions guiding the study are as follows:

1. How has the construct of school climate been defined conceptually and operationally in empirical studies published over the last decade?
2. Currently, what components do researchers who study school bullying and victimization believe are essential to the school climate construct?

The research project will be driven from a pragmatic theoretical orientation because the research

questions arose from a current situation (i.e., lack of consensus on the meaning of school climate in the literature) and its consequences (i.e., difficulty in measuring the impact of bullying prevention programs). As is fundamental to the pragmatic theoretical orientation, this study focuses on working toward addressing a particular problem: developing an operational definition of the school climate construct which could be used to assess the effectiveness of school improvement programs, such as bullying prevention. To best facilitate solving this problem, a mixed methodology will be used where phase 1 will be carried out using thematic analyses and phase 2 with quantitative analyses.

Methodology

The goal of this research project was to yield an empirically based, coherent definition of the school climate construct, as well as a comprehensive list of dimensions that could be incorporated into a valid measure of school climate.

Phase 1

In this first phase, the purpose was to identify how school climate has been conceptually and operationally defined in recent research in which school climate was measured quantitatively. This study is based upon the premise that the measures that researchers select reflect their conceptualization of the construct. This analysis provided an exhaustive list of all the components of the school climate construct that have been studied. A thematic analysis was then performed on the list to form a new conceptual model of school climate. The themes presented in the model also formed the basis for developing the questionnaire that was distributed as part of Phase 2.

Inclusion criteria. The empirical studies that provided data for phase 1 of this study were obtained from a building database of publications that were culled from relevant

bibliographic indexes (PsycInfo and ERIC). These indexes were searched with the keywords “school climate” with the following limits imposed: empirical articles that are peer-reviewed, written in English, and published between 1996-2009. This search yielded approximately 544 articles. Two Master’s level researchers with teaching backgrounds (the author and a research assistant) reviewed the abstracts, and where necessary the full publication, of all 544 identified articles. From this set, only studies in which school climate was measured quantitatively were selected. The search was limited to articles that measured school climate quantitatively because the vast majority of the school climate literature has been quantitative in nature (Hoy, Tarter & Kottkamp, 1991; Schoen & Teddlie, 2008). Furthermore, we view school climate and school culture as distinct constructs (see literature review); and the term “culture” instead of “climate” is more commonly used by researchers who use more qualitative methods (Schoen & Teddlie, 2008). Studies were excluded if they reported previously unpublished results (e.g., editorials, review articles) or if they did not report quantitative data about school climate. Reference lists from articles were also searched for further relevant literature. The resulting data set included 92 articles.

Procedure. Each selected study was examined and the following information (relevant data) was extracted and entered into a table:

1. The full reference for article
2. Quantitative scale name and reference, where available
3. The study location
4. The population studied
5. The conceptual definition of school climate

6. The operational definition, that is, the specific components of school climate that were measured by the scale
7. Sample items corresponding to each of the components on the scale

The final data set was comprised of the table containing the relevant data from all individual articles.

Data analysis. A thematic analysis of the data was carried out using techniques borrowed from qualitative research, specifically a bottom-up coding method described by Auerbach and Silverstein (2003) aimed at organizing text and discovering patterns within the organizational structure. First, relevant text was selected from the raw data (the 92 selected studies in their entirety) by reading through the publications with the research concerns in mind. Next, instances where similar wording was expressed in two or more studies were identified as repeating ideas. As patterns emerged through this process, themes arising from commonalities within the repeating ideas were identified. Two independent researchers, a doctoral level researcher and a master's level researcher (the author) both with several years of school teaching experience, conducted the analysis. This process of working jointly with another researcher enhanced validity by minimizing the subjective bias inherent in the qualitative technique used for the thematic analysis. The two researchers independently drafted an exhaustive list of themes and subsequently met to discuss and resolve discrepancies in the two lists. Within this collaborative coding process, the researcher primarily responsible for the analysis (the author) went over both sets of coding and compiled a master list of themes. The master list was then discussed with the second coder to explain the rationale that was used in its formation thereby establishing justifiability and transparency in the data analysis. Finally, an independent expert in school-based research (the research supervisor) audited the master list and provided feedback on the themes.

The feedback was used to revise the list as appropriate, finalize the themes and their corresponding descriptions, and organize the themes into larger theoretical constructs resulting in a model of school climate.

Phase 2

The goal in this second phase was to identify what components are essential to the school climate construct, according to researchers who study school bullying and victimization. In order to facilitate this objective, a group of distinguished Canadian scholars who conduct research on school bullying and victimization (PREVNet members) were surveyed using the Delphi poll methodology as a way of reaching consensus among participating experts.

PREVNet is a national network of Canadian researchers and non-governmental organizations that is committed to stopping bullying and to promoting healthy relationships among children. The organization is lead by two scientific co-directors, Dr. Wendy Craig and Dr. Debra Pepler, who are recognized internationally for their expertise in the area of bullying and victimization. Membership to this group is by invitation from the scientific co-directors only. The research partners of PREVNet represent leading researchers in Canada on bullying, aggression, victimization, and children's relationships, and healthy social/emotional development in children. PREVNet's mission is to develop a national strategy to reduce problems of bullying and victimization throughout Canada and to bridge research and practise by disseminating understanding and effective practices related to bullying throughout Canada (PREVNet, 2010).

The Delphi methodology was developed in the early 1950s, as a part of military research on expert opinion, to allow a group of individuals, as a whole, to deal with a complex problem (Neimeyer & Diamond, 2001). This methodology solicits and combines the opinions of a group of experts to develop consensus about a particular topic within a designated field. Delphi polls

are deemed to be economical, efficient, and accurate in gathering the opinions of a group of experts (Norcross, Hedges, & Prochaska, 2002). Cumulative research indicates that results from Delphi studies provide accurate answers to difficult questions, and the judgment of experts is recognized as a legitimate and useful input in generating consensus (Norcross et al., 2002). In effect, the Delphi methodology preserves the advantages of group decision-making (i.e., it draws from a broader knowledge-based rooted in each person's unique education, experiences, insights, and expertise) without incurring the disadvantages associated with committee interaction, such as group pressure to conform or influence of dominant individuals. It does so by maintaining anonymity, by providing controlled feedback to maintain task focus, and by presenting statistical representation of results to minimize group pressure to conform because anonymity is not being sought (Neimeyer & Diamond, 2001).

This particular group of individuals was consulted for several reasons. First, this group, of which I am a graduate student member, is part of an established and functioning national network that is supportive to research initiatives. Surveying an established group of researchers streamlined communications and presumably decreased the rate of non-respondents. Second, researchers who study school bullying commonly assess aspects of school climate in their work and thus are among those to most benefit from a common definition of school climate.

Our methodology deviated from the classical Delphi poll methodology in that we didn't restrict our panel to only the highest-ranking experts in the field. By inviting all researcher and graduate student members of PREVNet to participate, our "expert panel" was comprised of informed individuals who have knowledge of the topic being investigated yet have a varied level of expertise.

Participants. All researcher and graduate student members of PREVNet were invited to participate in the research project. At the time of phase 1 of the study, the network had 55 researcher members and 49 graduate student members from 28 Canadian universities creating a pool of 104 possible participants.

Measure. A questionnaire was developed using the school climate themes identified in phase 1 of the research project. Each item on this questionnaire contained one theme that was described by three elements: (a) a short label; (b) a narrative description of the theme; and (c) sample scale items that exemplify the theme. Questionnaire items were ordered alphabetically by theme label (see Appendix A).

The questionnaire included demographic questions, such as the participant's sex, province of work, status within PREVNet, years of PREVNet membership, number of years of experience as a researcher, area of research, and whether they have conducted school-based research. These data were used to describe the sample of participants (see Table 2 for demographic characteristics). Respondents were then asked to identify all of the components that they believe are essential to the school climate construct and hence should be included in a school climate measure that would be useful in evaluating school improvement initiatives, such as bully prevention programs. Specifically, respondents were asked to select a value between 0 and 5 to indicate the extent to which they consider the component essential to the school climate construct: (a) 5 means that the component is *absolutely essential*; (b) 4 means that the component is *highly important*; (c) 3 means that the component is *moderately important*; (d) 2 means the component is *somewhat important*; (e) 1 means that the component is of *low importance*; and (f) 0 means that the component is *not part of the construct*. Furthermore, the experts were asked to specify which groups of individuals (i.e., students, teachers, administrators, parents, etc.) would

be in the best position to provide information regarding each component. At the end of the list, they were invited to add any other components that they believe are essential and should be included on a measure of school climate, but were not listed on the questionnaire.

Pre-testing. Once a draft questionnaire was developed, it was pre-tested by expert review. Three researchers who are familiar with the school climate and bullying literature and are members of PREVNet independently conducted a review to determine whether the questionnaire was appropriate for the Delphi panel and comprehensive enough to collect all the information needed to address the goal of phase 2 of the study. An email was sent to these individuals consisting of a cover letter, stating the purpose, methods, risks, and benefits of participation in the study, and the questionnaire. These individuals were asked to read through the cover letter and then fill out the questionnaire taking note of any suspected problems and why they deemed them to be problematic. The experts were also asked to note the length of time it took them to read through the consent text and to complete the questionnaire. They were subsequently consulted in person or by telephone about their perceptions of the wording of the cover letter and questionnaire, the comprehensibility of the questions, the length of time it took to complete the questionnaire, and the ease with which they completed it. The questionnaire then underwent minor revisions and modifications based on the feedback.

Delphi poll procedure. The research protocol was reviewed and approved by the Ethics Committee at the University of Ottawa. All communication with participating experts occurred via the internet (see Figure 2 for an illustration of the steps involved in the Delphi method). As per Delphi poll methodology, the panel of experts were asked to complete the same questionnaire twice. In the first round, the experts answered the questions anonymously and without knowledge of the responses of their peers. During the second round, the experts were

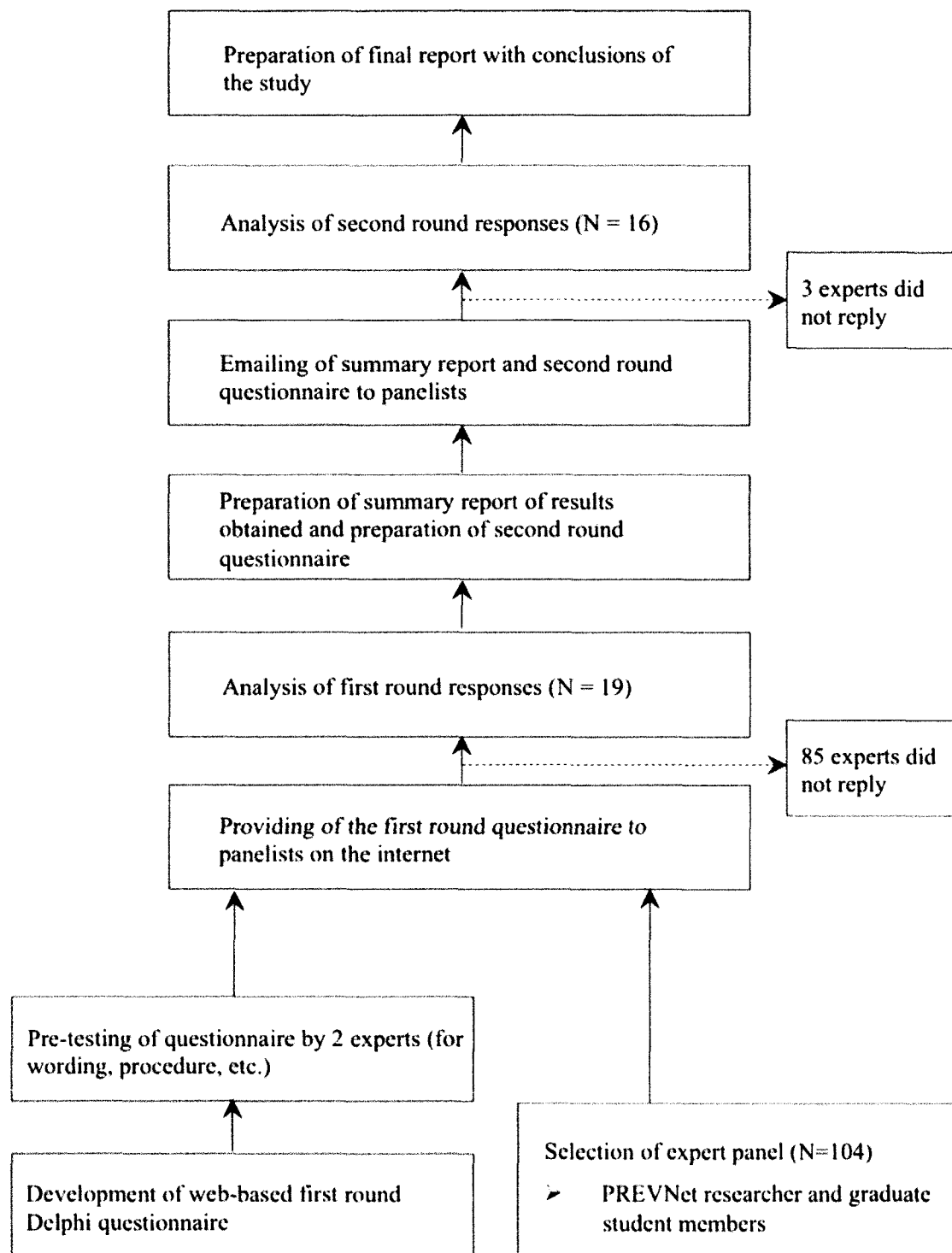


Figure 2. Delphi poll methodology.

provided with a summary report of the responses of the entire panel and were given the opportunity to revise their responses in light of the group judgement. At the beginning of September 2009, all researcher and graduate student members of PREVNet were invited to participate in the Delphi poll via email using the network's list-serve email address. Experts were assured that their responses would be kept strictly confidential. The email-based invitation described the objectives of the survey, as well as the nature of the Delphi poll methodology and invited those who were interested to follow an embedded link to the web-based questionnaire. Upon clicking the link, participants were taken to a page of consent text, which outlined the purpose of the study, the nature of the Delphi poll methodology, the potential risks and benefits of participation, and issues surrounding confidentiality and anonymity. At the bottom of the page, potential participants were asked to click on one of two choices: "I accept" or "I decline" to participate. Those who agreed to participate (the panel of experts) were asked to complete the online questionnaire within about three weeks. During the three-week interval, two reminder emails were sent in order to maximize the participation of as many experts as possible. After the three-week interval, the responses to the questionnaire were uploaded to a spreadsheet by the web-based survey software (i.e., SurveyMonkey). An initial analysis was conducted and a report describing the results of the first round was created. The summary report included the mean score and standard deviation for each item, and the numeric value that the participating expert had given to rate each item.

At the beginning of October 2009, the summary report was emailed to all 19 of the first round participants, enabling them to see their individual ratings as well as the mean group ratings for each item. After viewing the summary report, they were asked to follow an embedded link to return to the web page to complete the second round questionnaire. The purpose of providing the

second round questionnaire was to give the experts the opportunity to revise their initial responses in light of their colleagues' opinions. Again, the group of experts was given approximately three weeks to complete the round 2 questionnaire. A reminder email was sent to the participants two weeks after the summary report and invitation to complete the second questionnaire was sent. Round 2 responses were uploaded to a spreadsheet by the web-based survey software.

Data analysis. The effectiveness of the Delphi methodology in achieving consensus among panel experts was assessed using three statistical indices: Cronbach's alpha, individual-group correlation, and standard deviations of ratings across rounds. The rationale behind these analyses will be elaborated on in the results section. The final analysis consisted of mean score and standard deviation calculations for all items across rounds. The components that received mean scores of 2.5 or greater (indicating that they were considered moderately important, highly important, or essential to the school climate construct) were included in the operational definition of school climate.

Results

Phase 1

Dimensions and components of school climate. The thematic analysis of the reviewed literature resulted in the identification of three distinct dimensions of school climate: 1) individual, 2) interpersonal, and 3) organizational factors. Figure 3 presents a model of school climate, which depicts these dimensions (and their identified components) as inter-related. The model is presented in the form of a Venn diagram (see Figure 3) to illustrate the three dimensions and their dimensional components, as well as the relationships, influences, and subtle overlaps that exist between them. The circles of the Venn diagram are depicted with lines;

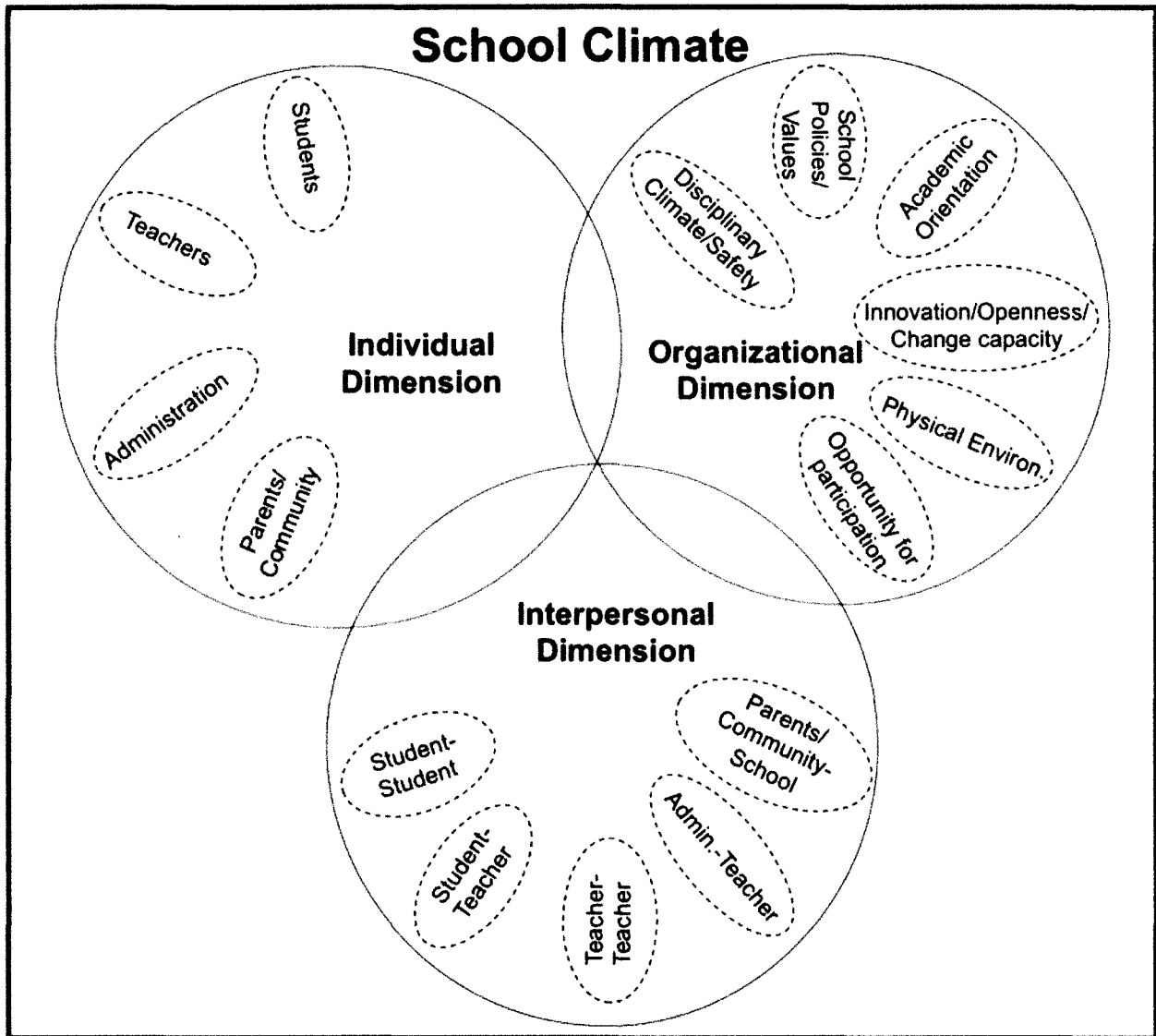


Figure 3. Model of school climate based on thematic analysis.

however, these lines do not represent walls but rather permeable membranes, which allow sub-components to pass through thus entering the realm of another dimension. The Venn diagram is surrounded by a rectangle that signifies the breadth and totality of the school climate system. All three dimensions must be considered simultaneously in order to fully grasp the nature of the climate of any given school.

The permeability of the divisions within the model manifested in some difficulties faced during the analysis. The process of categorizing and grouping school climate components lent itself to some arbitrariness due to the nature of the social system as a whole and the interconnectedness of the resulting model. The write up below describes specific the components that were deemed to fit within each dimension according to the thematic analysis:

Individual dimension. The review highlighted the importance of students, teachers, administrators, parents, and members of the community as reflecting and impacting the climate of a school. Thus, the individual characteristics of these key players in the school context, based on both their biological and psychological makeup, contribute in important ways to the school climate. Individual characteristics may include behavioural features such as students' levels of absenteeism, disruption of or skipping of classes, substance use, and social skills; teachers' absenteeism, frequency of changes in staff, and financial security; administrators' leadership and influence style; and parents/community's level of involvement with school, including frequency of visits, and helping with homework, in the classroom, or with school activities. The feelings and attitudes of these stakeholders were also deemed important, and may encompass such factors as students' levels of enjoyment of school and sense of belonging to the school; and teachers' work pressure, feelings of autonomy, professionalism, dedication, and morale.

Interpersonal dimension. Relationships among the various actors in the school

environment were deemed fundamental to a school's climate. Positive school climate may be determined by the extent to which various relationships are built on respect, trust, caring, support, inclusion, and open communication. Likewise, unhealthy relationships contribute to and reflect a less than ideal school climate. Student-student relationship factors include such things as the levels of cohesion and collaboration among students for personal and academic support. Student-teacher relationship factors may include teachers' commitment to students, including constructive feedback and encouragement, and the extent to which teachers and students respect each other. Teacher-teacher relationship factors include levels of collaboration and support; and the degree of commonality of purpose. Teacher-administrator relationship factors include the degree to which administrators treat teachers in an egalitarian manner; and the extent to which administrators and teachers support and respect one another. Parent/community-school relationship factors consist of levels of positive and productive involvement of parents and community, including influence on school policy and function.

Organizational dimension. The review suggested that school climate is influenced by several high-order organizational factors, which tend to reflect the philosophical principles of the school. Six distinct organizational factors were revealed, including the disciplinary climate/order and safety, school policies/values, academic orientation, opportunity for participation, openness/innovation/change capacity, and the physical environment. The disciplinary climate consists of clearly communicated rules about physical, relational, and emotional aggression, as well as clear and consistent enforcement of these rules; and perceptions of personal safety, school safety, and global safety. School policies/values may include the encouragement of social values and civic responsibility; institutional integrity, and commitment and respect for diversity. The academic orientation of a school includes the level of emphasis on academic learning and

academic challenge, and the level of achievement press and achievement motivation. Students and their families having opportunities for participation in school life is a component of school climate that reflects a school's commitment to providing opportunities for school involvement beyond schoolwork (e.g., sports, clubs) and participation in decision-making. Openness, innovation, and change capacity is a component that reflects a school that actively seeks to grow and provide quality and instructionally relevant curriculum. Finally, the physical environment component includes cleanliness and maintenance of school grounds and classrooms, and availability of materials and resources.

All of the above dimensions and components taken together contribute to a school's climate according to our thematic analysis. The individual dimension represents the biological and psychological factors that the stakeholders bring into the social system. The interpersonal dimension represents any interactions and relationships that result from individuals coming together within the social system. Finally, the organizational dimension represents factors that are governed by philosophical or ideological principles that often reflect the larger cultural context. All the dimensions flow into one another and thus influence one another. An organizational component, such as a school's disciplinary climate for example, has direct effects on the individual school stakeholders, especially the students. The school's rules will determine how a student who disrupts class will be dealt with. It will dictate how the teacher should react to the disruption and whether the school administrator should become involved. Consequently, the interpersonal dimension also comes into play. The quality of the relationship between the student and their teacher sets the stage for how the message is conveyed and perceived. Furthermore, the quality of the relationship between the teacher and the administrator will influence the likelihood that the teacher's action will be supported, thereby increasing the probability that they will

intervene in the first place.

The model also accounts for components of school climate that may influence a stakeholder's immediate experience, yet the stakeholder does not play an active role in determining them. For example, the school policies that impact school staff and students are often determined at the board-level by trustees. However, school board decisions are often based upon data taken from the schools themselves and the opinions and interests of administrators, teachers, students, and parents/community are considered. This example illustrates the complexity of the school climate construct and the inter-relatedness of its dimensions on a fairly straightforward level. In reality, every stakeholder's experience of school is unique because it is derived from a complex interaction of all three dimensions of school climate and perceived based upon their own psychological interpretation.

Measuring school climate. There is little agreement in the research literature on how to best measure school climate. The school climate dimensions and their components that were quantitatively measured within each of the 92 included studies, as well as the type of respondent that was utilized to gather the information, were extracted (See Appendix B). These data were summarized and the percentage of articles measuring each dimensional component by respondent type is presented in Table 1. Although a wide variety and configuration of components were investigated within the articles, some common measurement practices were identified in the data. The student-teacher relationship was measured most often (in 65% of the articles), while the Teacher-administrator relationship was measured least often (in 21% of the articles) in the assessment of school climate. Individual characteristics of teachers and of students were also commonly measured, in approximately half of the articles, while characteristics of parents/community were rarely measured (in only 13% of articles). In terms of

Table 1

Percentage of Articles Measuring each Dimensional Component by Respondent Type (N = 92)

Dimension	Component	Respondent type				
		Teachers	Students	Administrators	Parents/ community	
Individual	Students	50.00	15.22	32.61	6.52	2.17
	Teachers	53.26	31.52	17.39	6.52	3.26
	Administrators	40.22	29.35	6.52	2.17	3.26
	Parents/ community	13.04	6.52	5.43	0.00	5.43
Interpersonal	Student- student	44.57	11.96	31.52	3.26	1.09
	Student- teacher	65.22	20.65	45.65	4.35	3.26
	Teacher- teacher	28.26	23.91	3.26	1.09	0.00
	Teacher- administrator	20.65	19.57	0.00	1.09	1.09
	Parents/ community- school	34.78	21.74	8.70	2.17	6.52

Organizational	Disciplinary climate/ order & safety	43.48	15.22	30.43	1.09	2.17
	School policies/ values	27.17	8.70	22.83	0.00	1.09
	Academic orientation	45.65	23.91	19.57	2.17	4.35
	Openness, innovation, & change capacity	25.00	10.87	4.35	0.00	0.00
	Physical environment	28.26	17.39	11.96	1.09	2.17
	Opportunity for participation	29.35	13.04	15.22	0.00	1.09

organizational dimensions, the academic orientation and disciplinary climate were heavily relied upon in the assessment of school climate, being measured in 46% and 43% of articles, respectively. The results reflected an emphasis on the opinions of teachers and students and the influence of teachers and students on school climate. On the contrary, a lack of emphasis on the opinions of administrators and parents/community and the influence of administrators and parents/community was revealed.

Of the 92 studies included in this review, only 13% (N=12) sought the opinion of more than one type of respondent in their assessment of school climate. The majority, 87%, sought the opinion of one group of respondent (most often teachers or students), 11% sought the opinion of two groups of respondents, and only one study included in this review, or 1%, sought the opinions of three types of respondents (see Table 1). The number of components measured in any single study ranged from 1 to 11, of the 15 dimensional components of school climate that were identified in the thematic analysis. On average, the studies measured 5.42 out of the 15 dimensional components.

It was also revealed that 2% of the included studies measured only a single dimension, 36% measured two dimensions, and 62% measured school climate in the individual, interpersonal, and organizational dimensions (see Table 1). Upon closer examination of the 62% of studies (N = 57) that measured school climate based on three dimensions, the average number of dimensional components measured was 6.51, with the number of components measured per study ranging from 3 to 11 out of the possible 15.

Phase 2

Participating experts. A total of 104 potential participants from across Canada were invited to participate in this Delphi poll. Twenty-four (23.08%) accessed and began completing

the first round questionnaire, but five were not useable because they were not sufficiently complete to provide useable data. Thus, 19 experts responded to the first round, an 18.27% response rate. Sixteen of these (84.21%) completed the second round questionnaire of the study. Demographic characteristics of the expert participants are shown in Table 2. In the first round, the 19 participants consisted of 10 researchers and 9 graduate students. Each of the 10 researchers held a Doctorate degree and reported an average of 14 years ($SD = 8.60$) of experience as a researcher. Each of the 9 graduate students were in the process of obtaining either a Master's or Doctorate degree and reported an average of 4 years ($SD = 3.86$) of research experience. Fifteen of the 19 participants (78.95%) identified as conducting school-based research. The panel was composed of 15 females and 4 males from 6 provinces across Canada. There were no statistically significant differences in terms of sex or profession between invited experts and those that chose to participate as evident in the comparable proportions between rounds. Similarly, there were no statistically significant differences between rounds among participating experts (see Table 2).

Expert Consensus. Delphi methodology protocol dictates that the polling procedure is repeated until expert responses reach stability, at the same time being cognizant of levels of participant fatigue (Hasson, Keeney, and McKenna, 2000). The effectiveness of the Delphi methodology in achieving consensus among panel experts was assessed using three statistical indices: Cronbach's alpha, individual-group correlation, and standard deviations of ratings across rounds.

First, following procedures by Graham, Regehr, and Wright (2003), Cronbach's alpha calculations were used as a measure of homogeneity or consistency of ratings among the panelists and increasing homogeneity was considered to be an indicator of consensus.

Table 2

Demographic Characteristics of Participating Experts

Number of participants		Invited participants	Round 1	Round 2	$Z_{(\text{invited} - \text{round 1})}$	$Z_{(\text{round 1-2})}$
		104	19	16		
Sex	Female	73.08% (76)	78.95% (15)	81.25% (13)	0.54	0.17
	Male	26.92% (28)	21.05% (4)	18.75% (3)	0.54	0.17
Profession	Graduate student	47.12% (49)	47.37% (9)	43.75% (7)	0.02	0.21
	Researcher	52.88% (55)	52.63% (10)	56.25% (9)	0.02	0.21

Note. None of the comparisons were significant at $p \leq 0.05$.

Cronbach's alpha is a statistical index that is commonly used to measure the internal consistency of items on a scaled instrument to gauge its reliability. Cronbach's alpha will increase, moving toward 1.0, as the correlations among responses to test items increase, indicating that the content of the scale is homogeneous and therefore that the items are likely measuring the same construct. In this study, the data matrix was flipped for the calculation (see Graham et al., 2003) so that Cronbach's alpha became an index of consistency among panelists' ratings, essentially a kind of inter-rater reliability, as opposed to an estimate of consistency among items on a scaled instrument. In this sense, the smaller the variance between panelists' ratings, compared to the variance within each individual panelist's ratings, the closer Cronbach's alpha will be to 1.0, indicating homogeneity of the panel. Where the responses of the panelists are highly correlated, they are considered to be internally consistent.

Cronbach's alpha increased from 0.88 after the first round to 0.95 after the second round. Graham et al. (2003) suggest that when Cronbach's alpha is above 0.9 there is similarity in responses of the index panel, suggesting adequate consensus. Furthermore, this agreement is likely to be observed in other samples selected in the same way from the same population. Thus, the Cronbach's alpha value of 0.95 observed after the second round should be considered an indication of participating expert consensus. Therefore in this study, the Cronbach alpha values suggested that two rounds were deemed to be enough to reach consensus among participating experts.

Second, correlations between each individual panelist's ratings and the overall group rating were examined to determine if any individual's ratings were particularly inconsistent with the rest of the participants' ratings. Comparison of these individual participant-group correlations across rounds was used as an indicator of consensus when an individual's ratings became more

highly correlated with the rest of the panel's ratings after subsequent rounds. The values were statistically corrected, meaning they represent the correlation between a participant and the panel without the participant being considered part of the panel. These correlations correspond with the corrected item-total correlations that are often used in item analysis to determine whether an item is measuring what the rest of the scale is measuring during the development of scaled instruments.

As revealed in Table 3, in the first round the individual participant-group correlation ranged from 0.03 to 0.83 with a mean correlation of 0.50. This suggested that there were some participants who diverged from the group trend. In the second round, the individual participant-group correlation substantially increased in all cases. Round 2 values ranged from 0.43 to 0.94 with a mean correlation of 0.73, in line with the higher Cronbach's alpha observed for the entire group. Therefore, participants who diverged from the group in the first round demonstrated higher correlation with the entire group after the second round, again suggesting the development of consensus among the panelists.

Finally, a comparison of the standard deviations of expert participants' ratings across rounds was used as a measure of effectiveness of the Delphi method, where decreasing standard deviations of ratings were considered to be an indicator of convergence of ratings. Again, consensus was illustrated by consistent decreases in standard deviations from the first to second round for all items (see Table 4). A paired t-test was conducted to compare the mean standard deviation scores in round 1 ($M = 0.79$) and round 2 ($M = 0.57$). There was a statistically significant difference in the scores for round 1 and round 2; $t(14) = 8.34$, $p \leq 0.0001$. These results suggest that the subsequent round of the Delphi poll (round 2) did have an effect on the participants' ratings. Specifically, when the participants completed a second round questionnaire

Table 3

Individual Expert-Group Correlation Over Two Delphi Rounds

Participant	Round 1	Round 2
1	0.54	0.85
2	0.65	0.83
3	0.42	0.54
4	0.66	0.71
5	0.59	0.85
6	0.06	a
7	0.03	0.43
8	0.35	a
9	0.08	0.52
10	0.58	0.76
11	0.61	0.79
12	0.83	0.94
13	0.76	0.79
14	0.65	0.81
15	0.57	0.71
16	0.48	0.81
17	0.53	a
18	0.72	0.84
19	0.36	0.45
Cronbach's α	0.88	0.95

Note. ^a Did not respond to round 2 questionnaire.

Table 4

Means (M) and Standard Deviations (SD) for Delphi Poll Ratings

Item	Round 1 (n = 19)		Round 2 (n = 16)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
13. Student-student relationships	4.79	0.54	4.94	0.25
5. Characteristics of students	4.74	0.45	4.88	0.34
6. Characteristics of teachers	4.63	0.50	4.81	0.34
12. School policies/ values	4.63	0.50	4.81	0.40
7. Disciplinary climate/ order and safety	4.56	0.62	4.81	0.40
14. Student-teacher relationships	4.47	0.61	4.75	0.58
9. Opportunity for participation	4.26	0.93	4.38	0.72
2. Teacher-administrator relationships	4.05	1.08	4.19	0.66
3. Characteristics of administrators	3.79	1.13	4.06	0.85
15. Teacher-teacher relationships	3.89	0.81	3.94	0.57
4. Characteristics of parents/ community	3.79	0.98	3.63	0.62
10. Parent/ community-school relationships	3.72	0.83	3.63	0.62
1. Academic orientation	3.47	0.77	3.44	0.63
11. Physical environment	3.53	0.96	3.31	0.70
8. Openness, innovation, and change capacity	3.37	1.12	3.19	0.83
Average <i>SD</i>		0.79		0.57

their ratings converged, indicating group consensus.

Expert opinion on dimensions of school climate. In Table 4, the school climate components are ranked in descending order according to the mean score assigned by the expert panel. These scores are based on participants' responses to a Likert-type scale: 0 to 5. According to the ratings, all items were deemed by the experts to be important to the construct of school climate and thus are included in the table. Although the panelists were invited to propose components they thought were essential to school climate but were not listed on questionnaire, no additional components were suggested. The ranking of items in the second round was similar to the ranking of items in the first round, although the order of the rankings was slightly different. The top six items identified in the second round were not qualitatively different from those obtained in the first round. The item means and standard deviations from both rounds of data are presented, with the items are ranked-ordered in terms of the results of the second round (see Table 4). Partitions in the table divide the items into three categories based on the round two ratings: those that the experts deemed to be essential to the school climate construct (item mean of 4.5 and greater), those deemed to be highly important to the construct (mean ranging from 3.5 to 4.49), and those deemed to be moderately important to the construct (mean ranging from 2.5 to 3.49).

Six components were given the highest rating ($M \geq 4.5$) and deemed to be essential to the school climate construct, namely, "student-student relationships," "characteristics of students," "characteristics of teachers," "school policies/values," "disciplinary climate/order and safety," and "student-teacher relationships." Alternatively, six components: "opportunity for participation," "teacher-administrator relationships," "characteristics of administrators," "teacher-teacher relationships," "characteristics of parents/community," and "parent/community-

school relationships” were deemed to be highly important to the construct. Finally, “academic orientation,” “physical environment,” and “openness, innovation, and change capacity” were rated to be moderately important to the construct.

The percentage of participating experts that deemed a particular respondent type as best suited to provide information on a given dimensional component is presented in Table 5. According to the expert panel, teachers are in the best position to provide information on school climate (with 63-100% of experts deeming teachers as appropriate respondents for any given dimensional component). Students were deemed most appropriate to provide information on several dimensional components, including student characteristics, student-student relationships, student-teacher relationships, disciplinary climate/order and safety, academic orientation, and opportunity for student participation. However, students were rarely selected as appropriate to offer opinion on teacher-teacher, teacher-administrator, or parents/community-school relationships. In general, the expert panel deemed the support staff as least appropriate to provide information on school climate. However, support staff was selected as more appropriate to provide information on the characteristics of administration compared to students, parents/community, and administrators themselves (second only to teachers). Support staff was also deemed most appropriate, along with teachers, to provide information about the physical environment. Parents/community were selected as most appropriate to offer opinion on characteristics of parents/community, and parents/community-school relationships. Finally, administrators were deemed most appropriate in providing information on characteristics of teachers, while rarely selected as appropriate to provide opinion on student-student or student-teacher relationships.

Table 5

Percentage of Experts Selecting Respondent Type by Dimensional Component (N=16)

Dimension	Component	Respondent type				
		Teachers	Students	Administrators	Parents/ community	Support staff
Individual	Students	87.50	100.00	31.25	43.75	31.25
	Teachers	87.50	87.50	93.75	56.25	50.00
	Administrators	100.00	50.00	50.00	56.25	50.00
	Parents/ community	93.75	31.25	62.50	93.75	43.75
Interpersonal	Student- student	75.00	100.00	12.50	25.00	12.50
	Student- teacher	81.25	100.00	12.50	18.75	12.50
	Teacher- teacher	100.00	6.25	81.25	6.25	37.50
	Teacher- administrator	100.00	0.00	81.25	6.25	62.50
	Parents/ community- school	75.00	12.50	81.25	100.00	12.50

Organizational	Disciplinary climate/ order & safety	100.00	100.00	87.50	75.00	62.50
	School policies/ values	93.75	93.75	81.25	43.75	25.00
	Academic orientation	87.50	93.75	50.00	50.00	6.25
	Openness, innovation, & change capacity	100.00	31.25	75.00	18.75	37.50
	Physical environment	87.50	81.25	75.00	62.50	87.50
	Opportunity for participation	62.50	100.00	25.00	31.25	12.50

Discussion

School climate is a term that is commonly used but inconsistently defined in school-based research. This study aimed to yield an empirically based, coherent definition of the school climate construct, as well as a comprehensive list of dimensions that should be incorporated into a valid measure of school climate. In order to do so, a two-phase methodology was used. The first phase consisted of a thematic analysis of how the school climate construct has been defined in the literature by systematically examining relevant empirical research, published over the last decade, that measured school climate quantitatively. The second phase involved a quantitative analysis of the results of a Delphi poll aimed at reaching consensus among researchers who study bullying and victimization with regard to the essential components of the school climate construct.

Definition of School Climate

A synthesis and thematic analysis of the literature revealed that the definition of school climate is highly variable. Only two of the 92 studies analyzed defined school climate in exactly the same manner. School climate has been studied across a range of age groups, stakeholders, cultures, countries, and areas of research, resulting in an assortment of definitions.

Unfortunately, the great variability among definitions of school climate hampers efforts to compare findings across studies.

A consistent, unified definition of school climate is needed. A more useful definition of school climate would be one that is similar to that adopted by Loukas and Robinson (2004). These authors defined school climate as “a multidimensional construct that includes organizational, instructional, and interpersonal dimensions. School climate underlies individual values, behaviours, and group norms” (p. 210). This type of definition acknowledges the

multifarious nature of the school climate construct, as well as the interrelatedness of the different dimensions with individual characteristics/behaviours. This type of broad view of school climate leads to a more comprehensive definition spanning multiple domains and influences. In the review, three similar definitions were found and are presented in Table 6.

Conceptualization of School Climate

Despite the inconsistent use of definitions, indicators, and measures of school climate, recurrent themes within the reviewed literature did arise, which allowed for synthesis and organization of the school climate construct. The review resulted in the identification of three distinct dimensions of school climate: individual, interpersonal, and organizational. The individual dimension includes components that describe the characteristics (i.e., demographics, traits, feelings, attitudes, and behaviours) of individuals or groups of stakeholders (i.e., students, teachers, administrators, parents/community) within the school system. The interpersonal dimension includes indicators based on relationships (e.g., levels of cohesion, collaboration, support, respect, trust, and communication) among and between the school stakeholders. Finally, the organizational dimension includes components spanning both concrete (e.g., physical environment) and ideological (e.g., school policies/values) qualities of the institution. Although a wide variety of sub-dimensional components were investigated and considered during the data analysis process, some patterns and common themes arose which allowed components to be grouped and summarized within the three identified dimensions (see Figure 3).

It is important to keep in mind that this model of school climate represents an attempt to amplify, organize, and delineate the school climate construct. This model remains to be tested to determine whether it is applicable for those currently working in the field of school climate research. Moreover, it is likely that some of the components outlined in this model may have

Table 6

Definitions of School Climate

Author	Definition of School Climate
Birnbaum, A. S., et al (2005)	Perceptions of quality of the overall school environment, including the physical environment, social system, culture, and characteristics of members of the school community.
Brown, K. E., and Medway, F. J. (2007)	Comprised of three levels: [1] institutional level (relationships between the organization and its environment); [2] administrative level (relationships between the principal and teachers, expected teacher performance, and resources available to teachers); and [3] teacher level (whether teachers feel a sense of job accomplishment, school affiliation, and academic emphasis/expectations of high student achievement).
Esposito, C. (1999)	Perceptions of the physical and psychological school environment, including relationships among and between administration, teachers, parents, students, and the community at large; instructional and extracurricular management; the condition of the school building and grounds; and the encouragement of the development of academic and social values among students.
Loukas, A. and Robinson, S. (2004)	A multidimensional construct that includes organizational, instructional, and interpersonal dimensions. School climate underlies individual values, behaviors, and group norms.

more impact on school climate than others. One should also consider that our conceptualization was based on studies that measured school climate quantitatively. It remains to be determined how the dimensions and components that we have identified compare with those that are used in qualitative research studies of school climate. Despite these limitations, our conceptualization of school climate presented here appears to be the most comprehensive available to date.

Anderson's (1982) review, which represented the most thorough examination to date of school climate, conceptualized school climate based on Taguri's (1968) typology, which included four categories: (1) ecology (physical/material aspects); (2) milieu (characteristics of the population); (3) social system (patterns of relationships); and (4) culture (value and belief systems). Anderson's conceptualization of school climate parallels the one presented in this study as several of her school climate categories correspond directly with our school climate dimensions. First, her view of the milieu category is very similar to our individual dimension. However, Anderson failed to categorize characteristics of administrators or parents/community within her model as we did in ours. Anderson's social system and culture categories are analogous to our interpersonal and organizational dimensions, respectively, although there seem to be a few discrepancies between our categorizations. For example, Anderson placed "opportunity for student participation" within her social system category, while we viewed it as a component of the organizational dimension. Anderson justified her classification by focussing on the type and extent of student interaction that is possible within a school, whereas we view it as a commitment on the organization's part to provide the opportunity for participation in school life and decision-making.

The conceptualization of school climate presented in the current study differs from that of Anderson (1982) in that the school's ecology is not considered as a separate dimension unto

itself. Anderson identified building characteristics and school size as fitting within the ecology category, but pointed out that most ecology variables presented within the 40 major school climate studies that she reviewed showed low or inconsistent relationships with student outcomes. Within our model of school climate, the school's physical environment is considered to be a component of the organizational dimension. In this sense, a school's cleanliness and maintenance is a reflection of the organization's priorities and commitment to such a goal, and might include a philosophy that all members of the school community, including teachers, students, support staff, administrators, and community members, are committed to maintaining the school's physical environment and help to do so.

Cohen, Pickeral, and McCloskey (2008) recently outlined 10 indicators of school climate, which included rules and norms, physical safety, social and emotional security, support for learning, social and civic learning, respect for diversity, social support-adults, social support – students, school connectedness/engagement, and physical surroundings. These indicators fall within four dimensions, namely, safety, relationships, teaching and learning, and institutional environment. This conceptualization is quite comprehensive and similarities with the model presented in the current study are evident. It appears that all of Cohen et al.'s 10 school climate indicators are encompassed within the three dimensions of school climate presented in our conceptualization, although their arrangement within our model differs. However, as in Anderson's (1982) model, Cohen et al.'s conceptualization fails to truly encompass factors related to parents and the greater community, which have been shown to influence school climate. For example, parent/community involvement was one of the three main restructuring goals that contributed to the successful transformation of one school's climate as described by Emmons, Efimba, and Hagopian (1998). The school concentrated on increasing communication

and awareness among parents, students, and staff, fostering home-school collaboration around academic press, and establishing and maintaining community partnerships for program support to successfully create a more positive school climate.

The Delphi poll phase of the study resulted in expert consensus on components that are essential to the school climate construct and, hence, should be included in a comprehensive model of school climate. The experts deemed all of the factors identified in the thematic analysis as important to the school climate construct and worthy to be included in a comprehensive school climate measure. It was observed that the ranking of factors deemed most important by expert panels could be grouped into four clusters based on relative importance. It appeared that (1) factors related to students and teachers, including their relationships; and (2) factors related to the school's philosophy or ideology, such as policies, values, disciplinary climate, and ideas of school and global safety, were deemed most essential to the school climate construct and to a valid school climate measure. Factors related to (3) administrators and parents/community were deemed highly important to the school climate construct, yet subordinate to student and teacher factors. Finally, factors related to (4) concrete organizational phenomena such as academic orientation, the physical environment, and commitment to innovation were deemed important to the construct, yet of lesser importance than the above-mentioned factors. Based on the results of the Delphi poll rankings, the school climate model was modified slightly to reflect the input provided by the panel (Figure 4).

Figure 4 presents a Venn diagram-based model of school climate, illustrating the relationships, influences, and overlaps that exist between the three dimensions (as was presented in Figure 3). All components remained within the model because they were deemed important to the school climate construct by the expert Delphi panel. The model has been amended by the

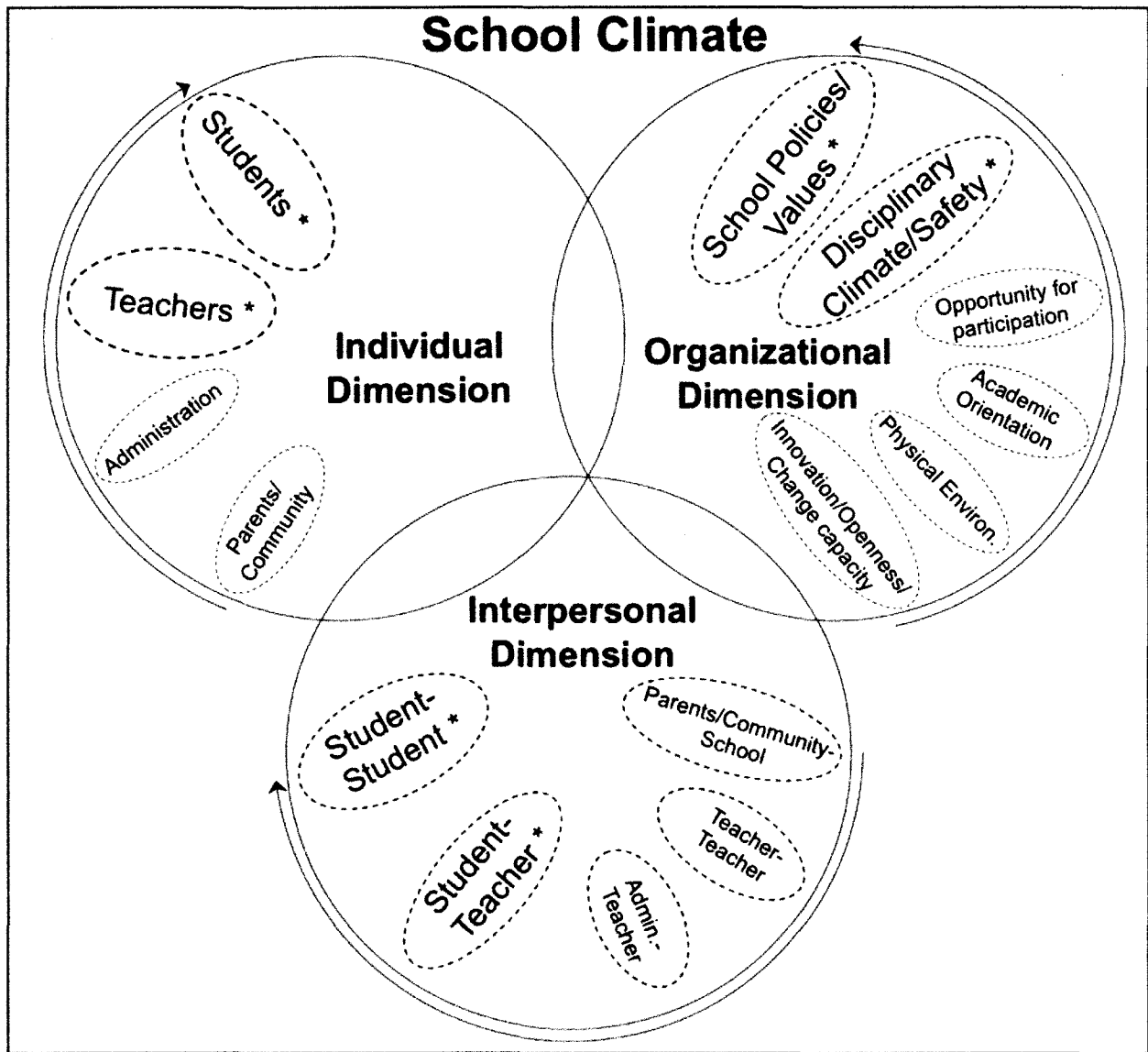


Figure 4. Amended model of school climate based on Delphi poll results. The asterisks indicate components that were rated as essential to the school climate construct. The arrows indicate the ranking of importance of the components within each dimension, from moderately important to absolutely essential.

inclusion of asterisks that indicated components that were rated as essential to the school climate construct. Furthermore, arrows were included to signify the ranking of importance of the components within each dimension, from moderately important to absolutely essential, as per the Delphi panel ratings.

Interestingly and perhaps not surprisingly, the relative positioning of the four clusters (student and teacher factors; school philosophy/ideology factors; administrator and parents/community factors; and concrete organizational phenomena) as deemed by the expert panel mimics the results of the thematic analysis (see Table 1) in which factors related to students and teachers and their relationships were most often considered and measured in research studying school climate. The disciplinary climate/order and safety component was heavily assessed within the reviewed school climate literature, and likewise was deemed to be essential to the school climate construct by the expert Delphi panel. However, other factors related to the school's philosophy or ideology (e.g., school policies/values) that were deemed highly important to the climate construct by the experts were less prevalent in the thematic analysis. Considering that the expert panel consisted of researchers in the area of bullying and victimization, prioritization of factors related to the disciplinary climate/order and safety school policies/values over other factors such as academic orientation or physical environment seems comprehensible and fitting.

One marked inconsistency between the findings of the thematic analysis and the rankings of the Delphi poll expert panel was observed. Academic orientation was heavily assessed in the reviewed literature (second only to student-teacher factors), while it was deemed only moderately important by the expert panel. This phenomenon might also be explained by the expert panel's greater familiarity for issues related to bullying and victimization, which focus

primarily on interpersonal factors rather than academic matters. Alternatively, it could reflect an eagerness to assess academically related factors in the school-based research because of teaching and learning is the primary focus of schools.

For the Delphi poll phase of this study, Cronbach's alpha was used as a measure of consistency or homogeneity of ratings among the participating experts and increasing homogeneity was considered to be an indication of consensus among experts (Graham, Regehr, & Wright, 2003). Even during the first Delphi round Cronbach's alpha was 0.88, which indicates significant homogeneity among the panelists from the beginning. This might seem somewhat unexpected given the widely divergent operational definitions of school climate that exist in the literature. However since the panel rated all components of school climate found in the literature as important to the construct, it does support the view of school climate as a multidimensional construct that encompasses dimensions ranging from the fine-grained inputs of direct interactions with social agents (e.g., student-teacher relationships) to the broad-based inputs of culture (e.g., school institutional integrity) as previously suggested within the conceptual framework of this study based on Bronfenbrenner's model (Figure 1). In this study, the high consistency among experts, even in the first round, is telling in that it suggests that researchers who are currently studying bullying and victimization in our school system seem to view school climate similarly (i.e., as a multidimensional construct) despite the lack of breadth in definition currently prevalent in the literature.

Delphi methodology was also useful in this study for improving agreement among experts. Cronbach's alpha improved from 0.88 in the first round to 0.95 after the second round. Particular movement was observed among the members of the panel who had the lowest correlation with the rest of the group after the first round (see Table 5, participants 7 and 9). In

fact, there was general improvement in the correlation with the whole group observed in all panelists. This finding suggests that the feedback of the summary of round 1 results to the group influenced the responses of the panelists in the second round, culminating in a greater degree of agreement.

School Climate Stakeholders

Based on the thematic analysis, there appears to be an emphasis on the opinions and influence of students and teachers, and the relationship between them, on school climate. This tendency is consistent with the findings of Samdal, Nutbeam, Wold, and Kannas (1998) who highlighted the importance of students' perceptions of satisfaction with school, as predicted by the quality of a student's school experience and the quality of the relationship with the teachers, as related to school climate. Brand, Felner, Seitsinger, Burns, and Bolton (2008) discussed the validity and utility of both teacher and student perceptions/ratings of school climate and their consistent relatedness to one another. The ratings and opinions as deemed by the expert panel mirrors the results of the thematic analysis in which factors related to students and teachers and their relationships were most often considered and measured in research studying school climate. The expert panel also deemed teachers and students to be the overall most appropriate respondents to provide information about school climate dimensions, echoing the results of the thematic analysis.

One could speculate that researchers tend to rely on the opinions of students and teachers, as opposed to administrators, when conducting school-based research because they feel that these individuals might offer more honest and accurate feedback on their school's climate. As leaders of the school, administrators might feel more accountable for the climate and might stand to lose should their school's climate be deemed unsatisfactory. Alternatively, administrators

might be less able to accurately gauge their school's climate because they are not as engaged in the classroom-level experiences of the school as teachers and students would be. Students and teachers might also be more desirable candidates to provide feedback to researchers simple due to the greater number of students and teachers versus administrators, making data collection more straightforward. For example, researchers might be able to collect adequate data to garner valid estimates from the students and teachers at just three or four schools. If they were to attempt to collect sufficient data from administrators, they may have to collect data from hundreds of different schools to achieve the same level of validity.

The thematic analysis also revealed a lack of emphasis on the opinions, characteristics, and relationships of administrators. Interestingly, research has established relationships between administrators' behaviours and school climate (e.g., Bulach, Boothe, & Pickett, 1998; Deal & Peterson, 1990) and the school climate can be shaped by the actions and behaviours of the principal (Sergiovanni & Starrat, 1998). In an autoethnographical study that obtained information from personal journals, a school principal concluded that an authoritarian leadership style has negative effects on school climate, as well as the morale and success of students and teachers within the school setting (Pepper & Hamilton Thomas, 2001). Alternatively, the adoption of a transformational leadership on the part of the administrator was shown to improve school climate. Rhodes, Camic, Milburn, and Lowe (2009) found that a school-based intervention aimed at modifying relationships between administrators and teachers improved school climate as measured based on teacher and student perception. Therefore, it appears that despite the lack of emphasis on the opinions and influence of administrators in the quantitatively based school climate research, administrators have been shown to play a significant role in a school's climate and thus should be considered in the measurement of school climate.

A discrepancy pertaining to the importance of administrators' perceptions when assessing school climate was observed between the findings of the thematic analysis and the rankings of the Delphi poll panel. The expert panel deemed administrators as important in providing information on components of school climate in contrast to the low percentage of published studies that included the opinions of administrators on school climate. The opinion of the expert panel seems reasonable given that several studies have highlighted the importance of administrators to school climate (Bulach et al., 1998; Deal & Peterson, 1990; Sergiovanni & Starrat, 1998; Pepper & Hamilton Thomas, 2001; Rhodes et al., 2009). Perhaps the panel's disparate view from published work of the past decade represents an evolving view of the school climate construct toward a more multi-dimensional conception involving all school stakeholders.

The prominence of parents/community influence and opinion was lacking both in the thematic analysis and in the rankings of the Delphi poll panel; however, studies have also highlighted the importance of parental involvement (e.g., Emmons et al., 1998). Haynes, Comer, and Hamilton-Lee (1989) found that school climate was considerably enhanced when parents were included in planning and organizing of school activities and contributed to important decisions about significant events in the school. Thus, the importance of considering the opinions and factors related to parents/community when measuring school climate is suggested. This illuminates a deficit in the current state of school climate assessment in school-based research.

Measuring School Climate

In accordance with previous findings (Anderson, 1982; Van Houtte, 2005), we found that measures of school climate tended to focus on only a few dimensions or components and failed to capture the full breadth of the construct. Currently, there appears to be no standard method to assess a school's climate, as evidenced by the large number of instruments being used. Many of

these instruments were not designed to measure school climate as a construct, but rather measure specific indicators of school climate. Using these measures, researchers have equated the quality of a specific presumed indicator to “school climate.” Clearly, further research needs to be done in the area of defining and measuring school climate as a construct and the development of a multi-dimensional instrument would be most useful.

In the literature, measurement of school climate consisted of one of the following approaches: measures that encompass a single-dimension of school climate, single scale measures that encompass multiple dimensions of school climate, or the use of multiple separate measures. School climate measurement typically involved the assessment of presumed indicators of school climate, such as the academic orientation at a school or the quality of the relationships between students and teachers. This approach, while prevalent, has considerable limitations. Studies that use scales or select subsets of scales representing one or two dimensions miss the other dimensions, for example, studies that define school climate in terms of relationships fail to capture the individual or organizational aspects of school climate). Furthermore, studies measuring specific components within a dimension of school climate miss the other dimensional components. For example, a study that defines school climate in terms of relationships and uses a scale that measures student-student relations, fails to fully capture the interpersonal dimension of a school because teachers, administrators, and parents/community are not considered. Thus, many studies that claim to study school climate may not actually measure school climate because they do not include important dimensions or components of the construct. School climate is more than a sole component in a single dimension. In order to accurately quantify school climate, it is critical that the measurement tool used captures the multi-dimensional nature of the construct.

Based on the results of the review/synthesis of the literature and of the Delphi poll, it appears that school climate would be best evaluated with measures that (1) assess all dimensions (individual, interpersonal, and organizational) taking into account the range of dimensional components (characteristics of students, teachers, administrators, and parents/community; student-student, student-teacher, teacher-teacher, teacher-administrator, parents/community-school relationships; and disciplinary climate/order and safety, school policies/values, academic orientation, openness/innovation/change capacity, physical environment, and opportunity for participation) that shape the experiences of students, teachers, administrators, and parents/community in schools; and (2) recognize student, teacher, administrator, and parent/community voices and opinions. Of the 92 studies that were reviewed, none met these two criteria.

Although none of the reviewed studies assessed school climate based on all of the suggested dimensions and components, that of Quinn, Poirier, Faller, Gable, and Tonelson (2006) assessed the largest number of school climate components, 10 out of 15, spanning all three of the dimensions in their examination of school climate in alternative education programs. Using the teacher and student versions of the Effective School Battery (Gottfredson, 1999), these authors assessed the majority of the components of the individual dimension and of the organizational dimension (missing only the “characteristics of parents/community” and “opportunity for participation” components, respectively). Within the interpersonal dimension, however, they assessed only student-student and student-teacher relationships. They also relied on only one respondent type (students or teachers) for several of the components that they assessed and failed to take into account the opinions of administrators and parents/community members. Alternatively, Van Horn and Lee (2003) and Esposito (1999) assessed school climate

based on the perceptions of two or three respondent groups for each of the school climate components that they assessed. These researchers evaluated 9 out of the 15 school climate components, spanning all three dimensions, using the Administrator and Parent versions of the School Climate Survey, respectively (Kelley et al., 1986). Although their methods of assessment appeared to recognize school climate's multi-dimensional nature, a number of key components or stakeholders were not considered, leading to a narrower view of the construct.

Due to the complexity and multi-dimensional nature of the school climate construct, it may not be possible to develop a single scale appropriate for all stakeholders in a school setting. The meaning and experience of the school's climate is undoubtedly different for students, teachers, administrators, and parents/community based on their priorities and expectations. It has been suggested that scale items would not have the same meaning for each different group. Researchers at the Yale Child Study Center School Development Program (Emmons et al., 2002) developed four versions of their School Climate Survey, tailored to elementary and middle school students, high school students, staff, and parents. However, not all of the components of their school climate definition are measured in each version of the scale. Although these authors present school climate as a single construct, it would appear that they view different dimensions as being measurable by different respondents. Johnson, Johnson, Ryan, Edens, and Dixon (1995) indicated that while teachers and administrators may have insights into the students' views of school climate, students would be unfamiliar with many factors that influence teachers' and administrators' perceptions of school climate. However, this view could be an oversight on the part of these researchers. It might be that students are capable of assessing all dimensions and components of school climate given properly worded questions at an age-appropriate level that is comprehensible to them. For example, although students might not have a full grasp of the

intricacies of their principal's leadership style, they are capable to provide a unique perspective on their principal's presence in the school and his or her interaction with students and teachers. Thus, multiple versions of a school climate scale, which assesses all dimensions and components of school climate tailored by respondent-type, might be most appropriate to construct a complete picture of a school's climate. The importance of gathering data from multiple informants within the school community is supported by bullying prevention research, which shows there are systematic differences among informants (i.e., students, teachers, parents) on reporting rates of bullying and victimization (Pellegrini & Bartini, 2000).

The purpose and intention of collecting school climate data should also be considered when deciding what type of measure should be used. For example, is the purpose of measuring a school's climate that of assessment or intervention? If one aims to label a school climate as positive or negative (as a variable in a research study, for instance), then a comprehensive measure may not be necessary. In this case, a streamlined, condensed version of a school climate measure could be used. However, if the school's climate were being assessed in the interest of understanding the dynamics of the school and subsequently improving them through intervention, then a comprehensive measure that gives a more complete picture would be suitable.

Limitations of the Research

There are several limitations of the thematic analysis phase of the study that should be noted. First, even though the systematic search strategy that was used was thorough, limiting the key words searched restricted the scope of the literature that was retrieved. However, an attempt was made to expand the data set by searching reference lists of the selected studies to find relevant articles that might not have been retrieved in the database searches. Second, the nature

of the qualitative techniques used during the thematic analysis may have contributed to bias due to subjectivity when identifying recurring themes in the school climate data. To minimize this subjective bias, two researchers performed the analysis in phase 1 independently each following the coding method outlined by Auerbach and Silverstein (2003). An expert third party then audited their collective and mutually agreed upon work. Furthermore, since qualitative techniques are prone to researcher bias and subjectivity (Creswell, 2003), the researchers remained cognizant of the need to rigorously self-monitor, self-question, and re-evaluate throughout the research process.

The Delphi poll phase of the study also has some limitations and caution must be taken in interpreting the results. First, pre-testing of the Delphi poll questionnaire was carried out by three researchers who were members of PREVNet, and as such were potential participants in the Delphi poll phase of the study. Participation in both the pre-testing of the questionnaire and in the Delphi poll lends itself to the potential of an exposure effect. However, since the pre-testing was only concerned with comprehensibility and ease of use of the questionnaire and not with content, the nature of the review likely had a negligible impact on responses in the Delphi poll.

Our Delphi panel, which consisted of PREVNet researchers and graduate students, was not restricted to the highest-ranking experts in the field thereby deviating from classical Delphi methodology. Hence, there is possibility that we've included the opinions of some individuals who may not be the top ranking experts in the field. The decision to include panelists from a varied level of expertise was made based on the low number of experts available to be polled in the study. In hindsight, this might have been a good decision given the low respondent rate. Furthermore, the two sub-populations (researchers and graduate students) were found to supply equivalent responses. Alternatively, it might have been beneficial to send Delphi panel

invitations on an individual basis to the most experienced researcher members of PREVNet who could be considered the highest-ranking Canadian experts in bullying and victimization. This more personalized method of invitation might have served to maximize participation rates as well as overall levels of expertise.

Only one-fifth of those invited agreed to participate and there was a small loss of participating experts between rounds, probably as a result of the time requirement and duration of the study process. Thus, it is not possible to determine whether the respondents are representative. However it should be noted that the demographic characteristics of the invited population were comparable to those of the respondents (see Table 2). Although the panelists represented a nationwide, heterogeneous group of individuals who had different areas and levels of expertise and research experience, they were all experts in bullying and victimization. This could lead to a narrower range of scores. For example, those interested in bullying prevention might have a different perception of components that should be included in a school climate measure that would be useful in evaluating school improvement initiatives than those interested in student academic achievement or vulnerability to psychopathology. Therefore, the generalizability of these findings outside of bullying prevention research might be limited.

In spite of the relatively low recruitment rate and the attrition between the first and second round, it is likely that this issue probably does not have any significant effect on the results of the study. First, the guideline that 15-30 people are required for an adequate panel size for a Delphi poll was met (Landeta, 1999), and second, the profile of the participating experts did not change significantly between rounds when compared to those failing to complete both rounds, in terms of sex, profession, province of work, or number of years conducting research.

Although the number of participating experts was appropriate, as recommended for Delphi studies (Hasson, Keeney, & McKenna, 2000), it could be that the list of school climate components obtained through the thematic analysis of empirical studies that measured school climate quantitatively may not be an exhaustive list. However, as the list was based on a synthesis and thematic analysis of the literature and all of the participants were allowed to add additional items on the first round, it is likely that the list represents most, if not almost all, of the potential components of school climate.

It is also important to note that the vast majority of the reviewed literature was work performed by researchers, and not by teachers, students or administrators. The expert Delphi panel was made up of researchers; thus we presented a list of school climate criteria created and used by researchers, and asked researchers to identify components that they believe are essential to school climate. This begs the question: To what extent are researchers' opinions shaped by the scales that they use (and which served as the basis for this study)? One could speculate that had the Delphi panel been made up of experienced teachers or school administrators, the rankings might differ.

Validity of the Results

Despite the limitations of the research outlined in the previous section, the two-phase methodology used in this study was rigorous and numerous safeguards were put in place throughout the study. The validity of the thematic analysis of the literature was supported by the fact that two independent researchers conducted it using a specific coding methodology, their results were pooled and discrepancies were resolved, and then an independent expert in school-based research audited the analysis. Validity was further enhanced by the fact that all three researchers had broad and relevant, yet different, backgrounds. This contributed to a

complementarity of expertise. Moreover, the documents that were analyzed were all peer-reviewed and published articles adding to the credibility and authenticity of the data. In addition, the results of thematic analysis were further validated by the use of Delphi poll technique carried out with a high degree of methodological precision (as outlined by Hasson et al., 2000). This methodology allowed a panel of experts to essentially review the content of the phase 1 analysis and offer their opinions. This process provided a mean rating of importance for each identified school climate dimension and allowed the panelists to offer their expert opinions on dimensions that have not commonly been assessed in the literature, but could be considered in the future.

Conclusion

In conclusion, inconsistent use of definitions, indicators, and measures of school climate has created a confusing and contradictory research base. Often, school climate is in the title of the article, yet, upon further inspection, school climate is measured in a limited number of dimensions and/or components. This study revealed that the construct of school climate is broad and it is difficult to yield a single, empirically based, coherent definition. Instead, dimensions and components that are essential to the school climate construct and hence should be incorporated into a good measure of school climate were compiled and organized, and illustrated visually within a school climate model (see Figure 4). Thus, this study provides preliminary and essential information that could be used to help create a comprehensive measure of school climate.

The results of this study are consistent with the idea of school climate as a multi-dimensional construct, referring to the character and quality of school life (Anderson, 1982; Van Houtte, 2005). School climate is based on individual's characteristics and experiences of school life, interpersonal relationships, teaching and learning systems, and organizational qualities

reflecting norms, goals, and values. A positive school climate fosters development and learning, and includes values that support social, emotional and physical safety for all individuals.

Students, teachers, administrators, parents, and community act together to develop and contribute to school climate. A complete and detailed picture of school climate should consider the construct based on three interrelated dimensions: (1) individual: characteristics of students, teachers, administrators, and parents/community; (2) interpersonal: student-student, student-teacher, teacher-administrator, and parents/community-school relationships; and (3) organizational: disciplinary climate/order and safety, school policies/values, academic orientation, openness/innovation/change capacity, physical environment, and opportunity for participation.

The main contribution of this research is to advance knowledge about the school climate construct by providing a specific operational definition by way of a list of dimensions and components that are essential to the school climate construct. This definition is based on existing scales that measure school climate used in published research up to this point and the opinions of an expert panel. This new knowledge could then potentially be used to develop a valid school climate scale for school evaluation and assessment of school improvement programs and initiatives. The assessment of school climate is especially salient at this time because the Ontario government has recently mandated that school climate be assessed every two years in all provincial schools, deeming school climate surveys as important tools in identifying the nature and extent of bullying problems (Ontario Ministry of Education, 2009). For this purpose, an initial assessment provides a baseline reading, while ongoing assessment helps determine the effectiveness of intervention programs. This recent policy change highlights the increasing prominence of the school climate construct and will undoubtedly pique the interest of private

consulting companies that specialize in school evaluation. Thus, it becomes increasingly important for the academic community to define school climate in an accurate and impartial way.

To this end, the proposed study represents an initial step in a comprehensive approach to develop a valid school climate scale which could then be disseminated to researchers so that it may be further validated and ultimately become a standardized instrument of choice for assessing school climate. Thus, this research could make important contributions to both theory and practice by providing a solid and empirically supported base from which a valid tool to measure school climate can be developed.

It now becomes important to test the proposed school climate model. Such testing might involve comparing the model with qualitative measures of school climate or polling other types of respondents such as teachers or school administrators to seek their opinions on the dimensions that are encompassed within the school climate construct. Furthermore, field studies may be designed that will empirically examine the dimensions and components identified in this study in relation to actual examples of school's climates and test the proposed model depicted in Figure 4 for fit. The methodology used here, although important for identifying factors that should be more closely examined in future research, does not provide data concerning their actual influence on school climate, since they are based on expert's opinions and not fieldwork. If the findings from the current research were supported, then they could provide valuable information that could be used in the design and implementation of school-based program to improve school climate and prevent bullying and victimization in schools.

References

- Anderson, C. S. (1982). The search for school climate: A review of the research. *Review of Educational Research, 52*, 368-420.
- Astor, R. A., Benbenishty, R., Zeira, A., & Vinokur, A. (2002). School climate, observed risky behaviors, and victimization as predictors of high school students' fear and judgments of school violence as a problem. *Health Education & Behavior, 29*, 716-736.
- Astor, R. A., Benbenishty, R., Vinokur, A. D., & Zeira, A. (2006). Arab and Jewish elementary school students' perceptions of fear and school violence: Understanding the influence of school context. *British Journal of Educational Psychology, 76*, 91-118.
- Astor, R. A., & Meyer, H. A. (2001). The conceptualization of violence-prone school subcontexts: Is the sum of the parts greater than the whole? *Urban Education, 36*, 374–399.
- Astor, R. A., Meyer, H. A., & Behre, W. J. (1999). Unowned places and times: Maps and interviews about violence in high schools. *American Educational Research Journal, 36*, 3–42.
- Auerbach, C.F., & Siverstein, L.B. (2003). *Qualitative Data: An introduction to coding and analysis*. New York: New York University Press.
- Baker, J. A. (1998). Are we missing the forest for the trees? Considering the social context of school violence. *Journal of School Psychology, 36*, 29–44.
- Billingsley, B., Carlson, E., & Klein, S. (2004). The working conditions and induction support of early career special educators. *Exceptional Children, 70*, 333-347.

- Birnbaum, A. S., Evenson, K. R., Motl, R. W., Dishman, R. K., Voorhees, C. C., Sallis, J. F., Elder, J. P., & Dowda, M. (2005). Scale development for perceived school climate for girls' physical activity. *American Journal of Health Behavior, 29*, 250-257.
- Bland, J. M., & Altman, D. G. (1997). Statistics notes: Cronbach's alpha. *British Medical Journal, 86*, 420-428.
- Bomotti, S., Ginsberg, R., & Cobb, B. (1999). Teachers in charter and traditional schools: A comparative study. *Education Policy Analysis Archives, 7*, 1-27.
- Brand, S., Felner, R. D., Seitsinger, A., Burns, A., & Bolton, N. (2008) A large scale study of the assessment of the social environment of middle and secondary schools: The validity and utility of teachers' ratings of school climate, cultural pluralism, and safety problems for understanding school effects and school improvement. *Journal of School Psychology, 46*, 507-535.
- Bruns, E. J., Walrath, C., Glass-Siegel, M., & Weist, M. D. (2004). School-based mental health services in Baltimore: Association with school climate and special education referrals. *Behavior Modification, 28*, 491-512.
- Bronfenbrenner (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner U. & Morris, P. A. (2006). The bioecological model of human development. In R. Lerner & W. Damon (Eds.) *Handbook of child psychology, 6th Ed*. Hoboken, NJ: John Wiley.
- Brookmeyer, K. A., Fanti, K. A., & Henrich, C. C. (2006). Schools, parents, and youth violence: A multilevel, ecological analysis. *Journal of Clinical Child and Adolescent Psychology, 35*, 504-514.

- Brown, K. E., & Medway, F. J. (2007). School climate and teacher beliefs in a school effectively serving poor South Carolina (USA) African-American students: A case study. *Teaching and Teacher Education, 23*, 529-540.
- Bruns, E. J., Walrath, C., Glass-Siegel, M., & Weist, M. D. (2004). School-based mental health services in Baltimore: Association with school climate and special education referrals. *Behavior Modification, 28*, 491-512.
- Bulach, C., Boothe, D., & Pickett, W. (1998). "Should nots" for school principals: Teachers share their views. *ERS SPECTRUM: Journal of School Research and Information, 16*, 16-20.
- Busseri, M. A., Willoughby, T., Chalmers, H., & Bogaert, A. R. (2006). Same-sex attraction and successful adolescent development. *Journal of Youth and Adolescence, 35*, 561-573.
- Cassinerio, C., & LaneGaron, P. S. (2006). Changing school climate one mediator at a time: Year-one analysis of a school-based mediation program. *Conflict Resolution Quarterly, 23*, 447-460.
- Chen, G. (2007). School disorder and student achievement: A study of New York City elementary schools. *Journal of School Violence, 6*, 27-43.
- Chen, G., & Weikart, L. A. (2008). Student background, school climate, school disorder, and student achievement: An empirical study of New York City's middle schools. *Journal of School Violence, 7*, 3-20.
- Cohen, J., McCabe, E. M., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record, 11*, 180-213.
- Cohen, J. Pickeral, T., & McCloskey, M. (2008). The challenge of assessing school climate. *Educational Leadership, 66* (4). Retrieved from

http://www.ascd.org/publications/educational_leadership.aspx

Colven, G., Tobin, T., Beard, K., Hagan, S., & Sprague, J. (1998). The school bully: Assessing the problem, developing interventions and future research directions. *Journal of Behavioral Education, 8*, 293-319.

Corten, R., & Dronkers, J. (2006). School achievement of pupils from the lower strata in public, private government-dependent and private government-independent schools: A cross-national test of the Coleman-Hoffer thesis. *Educational Research and Evaluation, 12*, 179-208.

Craig, W. M., & Pepler, D. J. (1997). Observations of bullying and victimization in the school yard. *Canadian Journal of School Psychology, 13*, 41-59.

Craig, W. M., Peters, R. D., & Konarski, R. (1998). *Bullying and victimization among Canadian school children*. Applied Research Branch Strategic Policy, Human Resources Development Canada.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches (2nd Ed.)*. Thousand Oaks, CA: Sage.

Crooks, C. V., Scott, K. L., Wolfe, D. A., Chiodo, D., & Killip, S. (2007). Understanding the link between childhood maltreatment and violent delinquency: What do schools have to add? *Child Maltreatment, 12*, 269-280.

Deal, T., & Peterson, K. (1990). *The principal's role in shaping school culture*. Washington, D.C.: U.S. Department of Education.

Dellar, G. B. (1999). School climate, school improvement and site-based management. *Learning Environments Research, 1*, 353-367.

- Desimone, L., Finn-Stevenson, M., & Henrich, C. (2000). Whole school reform in a low-income african american community: The effects of the CoZi model on teachers, parents, and students. *Urban Education, 35*, 269-323.
- DeRosier, M. E., & Newcity, J. (2005). Students' perceptions of the school climate: Implications for school safety. *Journal of School Violence, 4*, 3-19.
- DiPaola, M., & Tschannen-Moran, M. (2001). Organizational citizenship behavior in schools and its relationship to school climate. *Journal of School Leadership, 11*, 424-447.
- Dronkers, J., & Robert, P. (2008). Differences in scholastic achievement of public, private government-dependent, and private independent schools: A cross-national analysis. *Educational Policy, 22*, 541-577.
- Dwyer, K. P., Osher, D., & Hoffman, C. C. (2000). Creating responsive schools: Contextualizing early warning, timely response. *Exceptional Children, 66*, 347-365.
- Emmons, C. L., Efimba, M. O., & Hagopina, G. (1998). A school transformed: The case of Norman S. Weir. *Journal of Education for Students Placed at Risk, 3*, 39-51.
- Emmons, C. L., Haynes, N. M., & Comer, J. P. (2002). *School Climate Survey*. Yale Child Study Center, School Development Program.
- Espelage, D. L., & Swearer, S. M. (2003). Research on school bullying and victimization: What have we learned and where do we go from here? *School Psychology Review, 32*, 365-383.
- Esposito, C. (1999). Learning in urban blight: School climate and its effect on the school performance of urban, minority, low-income children. *School Psychology Review, 28*, 365-377. National Association of School Psychologists.

- Farmer, G. L. (1999). Disciplinary practices and perceptions of school safety. *Journal of Social Service Research, 26*, 1-38.
- Ferguson, C. J., San Miguel, C., Kilburn Jr., J. C., and Sanchez, P. (2007). The effectiveness of school-based anti-bullying programs: A meta-analytic review. *Criminal Justice Review, 32*, 401-414.
- Fraser, M. W. (1996). Aggressive behavior in childhood and early adolescence: An ecological developmental perspective on youth violence. *Social Work, 41*, 347-361.
- Freiberg, H. J. (1998). Measuring school climate: Let me count the ways. *Educational Leadership, 56*, 22-26.
- Freiberg, H. J. & Stein, T. A. (1999). Measuring, improving and sustaining healthy learning environments. In H. J. Freiberg (Ed.), *School climate: Measuring, improving and sustaining healthy learning environments* (pp. 1-11). Philadelphia, PA: Falmer Press.
- Frey, A., Ruchkin, V., Martin, A., & Schwab-Stone, M. (2009). Adolescents in transition: School and family characteristics in the development of violent behaviors entering high school. *Child Psychiatry & Human Development, 40*, 1-13.
- Furlong, M. J. (1996). Tools for assessing school violence. In S. Miller, J. Brodine, & T. Miller (Eds.), *Safe by design: Planning for peaceful school communities* (pp. 71-84). Seattle, WA: Committee for Children.
- Furlong, M., Casas, J. M., Corral, C., Chung, A., & Bates, M. (1997). Drugs and school violence. *Education & Treatment of Children, 20*, 263-280.
- Furlong, M. J., Grief, J. L., Bates, M. P., Whipple, A. D., & Jimenez, T. C. (2005). Development of the California School Climate and Safety Survey-Short Form. *Psychology in the Schools, 42*, 137-149.

Furlong, M. J., & Morrison, G. M. (2000). The school in school violence: Definitions and facts.

Journal of Emotional and Behavioral Disorder, 8, 71–82.

Gaziel, H. H. (2004). Predictors of absenteeism among primary school teachers. *Social*

Psychology of Education, 7, 421-434.

Goddard, R. D., Sweetland, S. R., & Hoy, W.K. (2000). Academic emphasis of urban elementary

schools and student achievement in middle schools: A multilevel analysis. *Educational*

Administration Quarterly, 26, 683-702.

Goldstein, A. (1994). *The ecology of aggression*. New York: Plenum.

Gottfredson, G. D. (1999). *The effective school battery: User's manual*. Ellicott City, MD:

Gottfredson Associates.

Gottfredson, G. D., & Gottfredson, D. C. (1985). *Victimization in schools*. New York: Plenum.

Gottfredson, G. D., Gottfredson, D. C., Payne, A. A., & Gottfredson, N. C. (2005). School

climate predictors of school disorder: Results from a national study of delinquency

prevention in schools. *Journal of Research in Crime and Delinquency, 42*, 412-444.

Graham, S., Bellmore, A. D., & Mize, J. (2006). Peer victimization, aggression, and their co-

occurrence in middle school: Pathways to adjustment problems. *Journal of abnormal*

child psychology, 34, 349-364.

Graham, B., Regehr, G. & Wright, J.G. (2003). Delphi as a method to establish consensus for

diagnostic criteria. *Journal of Clinical Epidemiology, 56*, 1150-1156.

Grayson, J. L., & Alvarez, H. K.(2008). School climate factors relating to teacher burnout: A

mediator model. *Teaching and Teacher Education: An International Journal of Research*

and Studies, 24, 1349-1363.

Gregory, A., Henry, D. B., & Schoeny, M. E. (2007). School climate and implementation of a

preventive intervention. *American Journal of Community Psychology, 40*, 250-260.

- Griffith, J. (1999). School climate as “social order” and “social action”: A multi level analysis of public elementary school students perceptions. *Social Psychology of Education, 2*, 339-369.
- Griffith, J. (2000). School climate as group evaluation and group consensus: Student and parent perceptions of the elementary school environment. *Elementary School Journal, 101*, 35-61.
- Griffith, J. (2004). Ineffective schools as organizational reactions to stress. *Social Psychology of Education, 7*, 257-287.
- Gruenert, S. (2008). School culture, school climate: They are not the same thing. *Principal, 87*, 56-59.
- Hanna, J. W. (1998). School climate: Changing fear to fun. *Contemporary Education, 69*, 83.
- Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing, 32*, 1008-1015.
- Haynes, N. M. & Comer, J. P. (1993). The Yale School Development Program process, outcomes, and policy implications. *Urban Implications, 28*, 166-199.
- Haynes, N. M., Comer, J. P., & Hamilton-Lee, M. (1989). School climate enhancement through parental involvement. *Journal of School Psychology, 27*, 87-90.
- Haynes, N. M., Emmons, C., & Ben-Avie, M. (1997). School climate as a factor in student adjustment and achievement. *Journal of Educational and Psychological Consultation, 8*, 321-329.
- Hawkins, L. D., Catalano, R. F., Morrison, D. M., O'Donnell, J., Abbott, R. D., & Day, L. E. (1992). The Seattle social development project: Effects of the first four years on protective factors and problem behaviors. In J. McCord & R. E. Tremblay (Eds.),

- Preventing antisocial behavior: Intervention from birth through adolescence* (pp. 139-161). New York: Guilford.
- Hawkins, J. D., Farrington, D. P., & Catalano, R. F. (1998). Reducing violence through the schools. In D. S. Elliot, B. A. Hamburg, & K. R. Williams (Eds.), *Violence in American schools: A new perspective* (pp. 127–155). New York: Cambridge University Press.
- Hellman, D. A., & Beaton, S. (1986). The pattern of violence in urban public schools: The influence of school and community. *Journal of Research in Crime and Delinquency*, 23, 102-127.
- Hoy, W. K. & Clover, S. (1986). Elementary school climate: A revision of the OCDQ. *Educational Administration Quarterly*, 1, 93-100.
- Hoy, W. K., Hannum, J., & Tschannen-Moran, M. (1998). Organizational climate and student achievement: A parsimonious view. *Journal of School Leadership*, 8, 336-359.
- Hoy, W. K., & Miskel, C. G. (1996). *Educational administration: Theory, research, and practice* (5th ed.). New York: McGraw-Hill.
- Hoy, W. K. & Sabo, D. J. (1998). *Quality middle schools: Open and healthy*. Thousand Oaks, CA: Corwin Press.
- Hoy, W. K., Smith, P. A., & Sweetland, S. R. (2003). The development of the organizational climate index for high schools: Its measure and relationship to faculty trust. *High School Journal*, 86, 38-49.
- Hyman, I. A., & Snook, P. A. (2000). Dangerous schools and what you can do about them. *Phi Delta Kappan*, 81, 488–501.
- Israelashvili, M., & Wegman-Rozi, O. (2007). Longitudinal evaluation of a preparation program for mandatory military service. *Military Psychology*, 19, 175-196.

- Johnson, W. L., Johnson, A. M., Gott, R., & Zimmerman, K. (1997). Assessing the validity of scores on the Charles F. Kettering scale for the junior high school. *Educational and Psychological Measurement, 57*, 858-869.
- Johnson, W. L., Johnson, A. M., Ryan, J. M., Edens, K. M., & Dixon, P. N. (1995). A Rasch analysis of factors derived from the Charles F. Kettering Ltd. School Climate Profile. *Educational and Psychological Measurement, 55*, 456-467.
- Johnson, B., & Stevens, J. J. (2006). Student achievement and elementary teachers' perceptions of school climate. *Learning Environments Research, 9*, 111-122.
- Johnson, B., Stevens, J. J., & Zvoch, K. (2007). Teachers' perceptions of school climate: A validity study of scores from the Revised School Level Environment Questionnaire. *Educational and Psychological Measurement, 67*, 833-844.
- Kallestad, J. H., Olweus, D., & Alsaker, F. (1998). School climate reports from Norwegian teachers: A methodological and substantive study. *School Effectiveness and School Improvement, 9*, 70-94.
- Karcher, M. J. (2004). Connectedness and school violence: A framework for developmental interventions. In E. R. Gerler Jr. (Ed.), *Handbook of School Violence* (pp. 7-34). New York: The Haworth Reference Press.
- Kasen, S., Berenson, K., Cohen, P., & Johnson, J. G. (2004). The effects of school climate on changes in aggressive and other behaviors related to bullying. In D. L. Espelage & S. M. Swearer (Eds.), *Bullying in American schools: A social-ecological perspective on prevention and intervention* (pp.187-210). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kasen, S., Cohen, P., & Brook, J. S. (1998). Adolescent school experiences and dropout, adolescent pregnancy, and young adult deviant behavior. *Journal of Adolescent*

Research, 13, 49-72.

Kasen, S., Johnson, J., & Cohen, P. (1990). The impact of school emotional climate on student psychopathology. *Journal of Abnormal Child Psychology, 18, 165-177.*

Kelley, E. A., Glover, J. A., Keefe, J. W., Halderson, C., Sorenson, C., & Speth, C. (1986). *School Climate Survey (Modified)*. Reston, VA: National Association of Secondary School Principals.

Khoury-Kassabri, M., Astor, R. A., & Benbenishty, R. (2007). Weapon carrying in Israeli schools: The contribution of individual and school factors. *Health Education & Behavior, 34, 453-470.*

Khoury-Kassabri, M., Astor, R. A., & Benbenishty, R. (2009). Middle eastern adolescents' perpetration of school violence against peers and teachers: A cross-cultural and ecological analysis. *Journal of Interpersonal Violence, 24, 159-182.*

Khoury-Kassabri, M., Benbenishty, R., & Astor, R. A. (2005). The effects of school climate, socioeconomics, and cultural factors on student victimization in israel. *Social work research, 29(3), 165-180.*

Khoury-Kassabri, M., Benbenishty, R., Zeira, A., & Astor, R. A. (2004). The contributions of community, family, and school variables to student victimization. *American Journal of Community Psychology, 34, 187-204.*

Kitsantas, A., Ware, H. W., & Martinez-Arias, R. (2004). Students' perceptions of school safety: Effects by community, school environment, and substance use variables. *Journal of Early Adolescence, 24, 412-430.*

- Koth, C. W., Bradshaw, C. P., & Leaf, P. J. (2008). A multilevel study of predictors of student perceptions of school climate: The effect of classroom-level factors. *Journal of Educational Psychology*, 100(1), 96-104.
- Kuperminc, G. P., Leadbeater, B. J., & Blatt, S. J. (2001). School social climate and individual differences in vulnerability to psychopathology among middle school students. *Journal of School Psychology*, 39, 141-159.
- Kuperminc, G. P., Leadbeater, B. J., Emmons, C., & Blatt, S. J. (1997). Perceived school climate and difficulties in the social adjustment of middle school students. *Applied Developmental Science*, 1, 76-88.
- Landeta, J. (1999). *El Metodo Delphi*. Barcelona: Ariel.
- Lane-Garon, P. S., & Richardson, T. (2003). Mediator mentors: Improving school climate, nurturing student disposition. *Conflict Resolution Quarterly*, 21, 47-67.
- Lerner, R. M. (2002). *Concepts and theories of human development (3rd Ed.)*. Mahwah, NJ: Lawrence Erlbaum.
- Lerner, R. M., Korn, M. E. (2000). Developmental psychology: Theories. In A. E. Kazdin (Ed.), *Encyclopedia of psychology* (Vol. 3, pp. 13-18). Washington, DC, & New York: American Psychological Association & Oxford University Press.
- Loukas, A., & Murphy, J. L. (2007). Middle school student perceptions of school climate: Examining protective functions on subsequent adjustment problems. *Journal of School Psychology*, 45, 293-309.
- Loukas, A., & Robinson, S. (2004). Examining the moderating role of perceived school climate in early adolescent adjustment. *Journal of Research on Adolescence*, 14, 209-233.

- Loukas, A., Suzuki, R., & Horton, K. D. (2006). Examining School Connectedness as a Mediator of School Climate Effects. *Journal of Research on Adolescence, 16*, 491-502.
- Ma, X. (2002). Bullying in middle school: Individual and school characteristics of victims and offenders. *School Effectiveness and School Improvement, 13*, 63-89.
- Ma, X. (2003). Sense of belonging to school: Can schools make a difference? *Journal of Educational Research, 96*, 340-349.
- Ma, X., & Wilkins, J. L. M. (2002). The development of science achievement in middle and high school: Individual differences and school effects. *Evaluation review, 26*, 395-417.
- Malecki, C. K., & Demaray, M. K. (2003). Carrying a weapon to school and perceptions of social support in an urban middle school. *Journal of Emotional and Behavioral Disorder, 11*, 169-178.
- Mathews, C., Boon, H, Flisher, A. J., & Schaalma, H. P. (2006). Factors associated with teachers' implementation of HIV/AIDS education in secondary schools in Cape Town, South Africa. *AIDS Care, 18*, 388-397.
- McDonald, A. J., Ross, S. M., Bol, L., & McSparrin-Gallagher, B. (2007). Charter schools as a vehicle for education reform: Implementation and outcomes at three inner-city sites. *Journal of Education for Students Placed at Risk, 12*, 271-300.
- McEvoy, A. & Welker, R. (2000). Antisocial behavior, academic failure, and school climate: A critical review. *Journal of Emotional and Behavioral Disorders, 8*, 130-140.
- Merrell, K. W., Gueldner, B. A., Ross, S. W., & Isava, D. M. (2008). How effective are school bullying intervention programs? A meta-analysis of intervention research. *School Psychology Quarterly, 23*, 26-42.

- Morrison, G. M., & Skiba, R. (2001). Predicting violence from school misbehavior: Promises and perils. *Psychology in the Schools, 38*, 173–184.
- Murray, R. K. (1997). The impact of school uniforms on school climate. *NASSP Bulletin, 81*, 106-112.
- Nansel, T., Overpeck, M., Pilla, R., Ruan, W., Simons-Morton, B., & Scheidt, P. (2001). Bullying behaviors among US youth: Prevalence and association with psychosocial adjustment. *Journal of the American Medical Association, 285*, 2094–2100.
- National Institute of Education. (1978). *Violent schools, safe schools: The safe school study report to congress*. Washington, DC: National Institute of Education.
- Neimeyer, G. J., & Diamond, A. K. (2001). The anticipated future of counselling psychology in the United States: A Delphi poll. *Counselling Psychology Quarterly, 14*, 49-65.
- Networks of Centres of Excellence of Canada (2006). *The networks: PREVNet - Promoting Relationships and Eliminating Violence Network*. Retrieved from http://www.nce.gc.ca/nces-rces/prevnet_e.htm
- Noguera, P. A. (1995). Preventing and producing violence: A critical analysis of responses to school violence. *Harvard Educational Review, 65*, 189–212.
- Norcross, J. C., Hedges, M., & Prochaska, J. O. (2002). The face of 2010: A Delphi poll on the future of psychotherapy. *Professional Psychology: Research and Practice, 33*, 316–322.
- O'Farrell, S. L., & Morrison, G. M. (2003). A factor analysis exploring school bonding and related constructs among upper elementary students. *California School Psychologist, 8*, 53-72.

- Olweus, D. (1991). Bully/victim problems among schoolchildren: Basic facts and effects of a school based intervention program. In D. J. Pepler & K. H. Rubin (Eds.), *The development and treatment of childhood aggression*. Hillsdale, NJ: Erlbaum.
- Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Cambridge, MA: Blackwell.
- Olweus, D. (1999). Norway. In P. K. Smith, Y. Morita, J. Junger-Tas, D. Olweus, R. Catalano, & P. Slee (Eds.), *The nature of school bullying: A cross-national perspective* (pp. 28-48). New York, NY: Routledge.
- O'Moore, M. (2000). Critical issues for teacher training to counter bullying and victimization in Ireland. *Aggressive Behavior, 26*, 99-111.
- Ontario Ministry of Education (2009). *Policy/program memorandum no. 145*. Retrieved from <http://www.edu.gov.on.ca/extra/eng/ppm/145.html>
- Papanastasiou, C., & Koutselini, M. (2003). Developmental Model of Democratic Values and Attitudes toward Social Actions. *International Journal of Educational Research, 39*, 539-549.
- Papanastasiou, C., & Papanastasiou, E. C. (2004). Major influences on attitudes toward science. *Educational Research and Evaluation, 10*, 239-257.
- Parcel, G. S., Perry, C. L., Kelder, S. H., Elder, J. P., Mitchell, P. D., Lytle, L. A., et al. (2003). School climate and the institutionalization of the CATCH program. *Health Education & Behavior, 30*, 489-502.
- Pashiardis, G. (2008). Toward a knowledge base for school climate in Cyprus's schools. *International Journal of Educational Management, 22*, 399-416.

- Pellegrini, A., & Bartini, M. (2000). An empirical comparison of methods of sampling aggression and victimization in school settings. *Journal of Educational Psychology, 92*, 360–366.
- Perkins, D. F., & Jones, K. R. (2004). Risk behaviors and resiliency within physically abused adolescents. *Child Abuse & Neglect: The International Journal, 28*, 547-563.
- Perkins, D. F., Luster, T., & Jank, W. (2002). Protective factors, physical abuse, and purging from community-wide surveys of female adolescents. *Journal of Adolescent Research, 17*, 377-400.
- Pepper, K., & Hamilton Thomas, L. (2002). Making a change: The effects of the leadership role on school climate. *Learning Environments Research, 5*, 155-166.
- Powell, K. B. (1997). Correlates of violent and nonviolent behavior among vulnerable inner-city youth. *Family & Community Health, 20*, 38-47.
- PREVNet. (2010). Promoting relationships and eliminating violence. Retrieved from <http://prevnet.ca/AboutUs/tabid/92/Default.aspx>
- Quinn, M. M., Poirier, J. M., Faller, S. E., Gable, R. A., & Tonelson, S. W. (2006). An Examination of School Climate in Effective Alternative Programs. *Preventing School Failure, 51*, 11-17.
- Rhodes, J. E., Camic, P. M., Milburn, M., & Lowe, S. R. (2009). Improving middle school climate through teacher-centered change. *Journal of Community Psychology, 37*, 711-724.
- Rodkin, P. C., & Hodges, E. V. E. (2003). Bullies and victims in the peer ecology: Four questions for psychologists and school professionals. *School Psychology Review, 32*, 384-400.

- Roland, E., & Galloway, D. (2002). Classroom influences on bullying. *Educational Research, 44*, 299–312.
- Ross, S. M., & Lowther, D. L. (2003). Impacts of the co-nect school reform design on classroom instruction, school climate, and student achievement in inner-city schools. *Journal of Education for Students Placed at Risk, 8*, 215-246.
- Ross, S. M., McDonald, A. J., Alberg, M., & McSparrin-Gallagher, B. (2007). Achievement and climate outcomes for the Knowledge is Power Program in an inner-city middle school. *Journal of Education for Students Placed at Risk, 12*, 137-165.
- Ross, S. M., Nunnery, J. A., Goldfeder, E., McDonald, A., Rachor, R., Hornbeck, M., & Fleischman, S. (2004). Using school reform models to improve reading achievement: A longitudinal study of direct instruction and success for all in an urban district. *Journal of Education for Students Placed at Risk, 9*, 357-388.
- Rutter, M. (1983). School effects on student progress: Research findings and policy implications. *Child Development, 54*, 1-29.
- Rutter, M., & Maughan, B. (2002). School effectiveness findings 1979-2002. *Journal of School Psychology, 40*, 451-475.
- Ruus, V-R., Veisson, M., Leino, M., Ots, L., Pallas, L., Sarv, E-S., & Veisson, A. (2007). Students' well-being, coping, academic success, and school climate. *Social Behavior and Personality, 35*, 919-936.
- Sabo, D. J. (1996). Organizational analysis of healthy interpersonal dynamics and teacher participation. *Journal of School Leadership, 6*, 576-599.
- Samdal, O., Nutbeam, D., Wold, B., & Kannas, L. (1998). Achieving health and educational goals through schools: A study of the importance of the school climate and the students'

- satisfaction with school. *Health Education Research*, 13, 383-397.
- Santrock, J. W. (1996). *Child development* (7th ed.). Madison, WI: Brown & Benchmark.
- Sava, F. A. (2002). Causes and effects of teacher conflict-inducing attitudes towards pupils: A path analysis model. *Teaching and Teacher Education*, 18, 1007-1021.
- Scheerens, J., & Bosker, R. J. (1997). *The foundations of educational effectiveness*. Oxford, UK: Elsevier.
- Schoen, L. T., & Teddlie, C. (2008). A new model of school culture: A response to a call for conceptual clarity. *School Effectiveness and School Improvement*, 19, 129-153.
- Schmitt, N., Sacco, J. M., Ramey, S., Ramey, C., & Chan, D. (1999). Parental employment, school climate, and children's academic and social development. *Journal of Applied Psychology*, 84, 737-753.
- Schulte, L. E., Thompson, F., Talbott, J., Luther, A., Garcia, M., Blanchard, S., et al. (2002). The development and validation of the ethical climate index for middle and high schools. *School Community Journal*, 12, 117-132.
- Sergiovanni, T., & Starratt, R. (1998). *Supervision: A redefinition*. Boston, MA: McGraw-Hill.
- Shaunessy, E., Suldo, S. M., Hardesty, R. B., & Shaffer, E. J. (2006). School functioning and psychological well-being of international baccalaureate and general education students: A preliminary examination. *Journal of Secondary Gifted Education*, 17, 76-89.
- Sherbloom, S. A., Marshall, J. C., & Sherblom, J. C. (2006). The relationship between school climate and math and reading achievement. *Journal of Research in Character Education*, 4, 19-31.
- Slaughter-Defoe, D. T., & Carlson, K. G. (1996). Young African American and Latino children in high-poverty urban schools: How they perceive school climate. *Journal of Negro*

Education, 65, 60-70.

Smith, J. D. (2006). Solutions for bullying: Restorative practices for classrooms and schools.

TESL Ontario Contact, 32, 42-51.

Smith, S. W., Daunic, A. P., Miller, M. D., & Robinson, T. R. (2002). Conflict resolution and peer mediation in middle schools: Extending the process and outcome knowledge base.

Journal of Social Psychology, 142, 567-586.

Smith, J. D., Schneider, B., Smith, P. K. & Ananaiadou, K. (2004). The effectiveness of whole-school anti-bullying programs: A synthesis of evaluation research. *School Psychology Review, 33, 548-561.*

Sprague, J., Walker, H. M., Stieber, S., Nishioka, V., & Wagner, L. (2001). Exploring the relationships between school discipline referrals and delinquency. *Psychology in the Schools, 38, 197-206.*

Stephens, R. D. (1994). Planning for safer and better schools: School violence prevention and intervention strategies. *School Psychology Review, 23, 204-215.*

Sterbinsky, A., Ross, S. M., & Redfield, D. (2006). Effects of comprehensive school reform on student achievement and school change: A longitudinal multi-site study. *School Effectiveness and School Improvement, 17, 367-397.*

Stewart, E. B. (2008). School structural characteristics, student effort, peer associations, and parental involvement: The influence of school- and individual-level factors on academic achievement. *Education and Urban Society, 40, 179-204.*

Suldo, S. M., Shaffer, E. J., Riley, K. N. (2008). A social-cognitive-behavioral model of academic predictors of adolescents' life satisfaction. *School Psychology Quarterly, 23, 56-69.*

- Suldo, S. M., Shaffer, E. J., & Shaunessy, E. (2008). An independent investigation of the validity of the School Attitude Assessment Survey--Revised. *Journal of Psychoeducational Assessment*, 26, 69-82.
- Swearer, S. M., Peugh, J., Espelage, D. L., Siebecker, A. B., Kingsbury, W. L., & Bevens, K. S. (2006). A socioecological model for bullying prevention and intervention in early adolescence: An exploratory examination. In S. R. Jimerson & M. J. Furlong (Eds.), *The handbook of school violence and school safety: From research to practice* (pp. 257-274). Mahwah, NJ: Lawrence Erlbaum Associates.
- Tagiuri, R. (1968). The concept of organizational climate. In R. Tagiuri & G. H. Litwin (Eds.), *Organizational climate: Exploration of a concept* (pp. 11-32). Cambridge, MA: Harvard Business School, Division of Research.
- Taylor, D. C., & Tashakkori, A. (1995). Decision participation and school climate as predictors of job satisfaction and teacher's sense of efficacy. *Journal of Experimental Education*, 63, 217-227.
- Timmerman, M. C. (2004). Safe schools and sexual harassment: The relationship between school climate and coping with unwanted sexual behaviour. *Health Education Journal*, 63, 113-126.
- Tobin, T., & Sprague, J. R. (2000). Alternative educational strategies: Reducing violence in school and the community. *Journal of Emotional and Behavioral Disorders*, 8, 129-200.
- Tschannen-Moran, M. (2001). The effects of a state-wide conflict management initiative in schools. *American Secondary Education*, 29, 2-32.

- Uline, C., & Tschannen-Moran, M. (2008). The walls speak: The interplay of quality facilities, school climate, and student achievement. *Journal of Educational Administration, 46*, 55-73.
- Van Horn, M., & Lee. (2003). Assessing the unit of measurement for school climate through psychometric and outcome analyses of the school climate. *Educational and Psychological Measurement, 63*, 1002-1019.
- Van Houtte, M. (2005). Climate of culture? A plea for conceptual clarity in school effectiveness research. *School Effectiveness and School Improvement, 16*, 71-89.
- Vieno, A., Perkins, D. D., Smith, T. M. , & Santinello, M. (2005). Democratic school climate and sense of community in school: A multilevel analysis. *American Journal of Community Psychology, 36*, 327-341.
- Vreeman R. C., & Carroll, A. E. (2007). A systematic review of school-based interventions to prevent bullying. *Archives of Pediatric and Adolescent Medicine, 161*, 78-88.
- Vuillr, J., & Schenkel, M. (2001). Social equalization in the health of youth: The role of the school. *European journal of public health, 11*, 287-293.
- Wade, K. K., & Stafford, M. E. (2003). Public school uniforms: Effect on perceptions of gang presence, school climate, and student self-perceptions. *Education and Urban Society, 35*, 399-420.
- Way, N., & Greene, M. L. (2006). Trajectories of Perceived Friendship Quality During Adolescence: The Patterns and Contextual Predictors. *Journal of Research on Adolescence, 16*, 293-320.
- Way, N., Reddy, R., & Rhodes, J. (2007). Students' perceptions of school climate during the middle school years: Associations with trajectories of psychological and behavioral

- adjustment. *American Journal of Community Psychology*, *40*, 194-213.
- Way, N., & Robinson, M. G. (2003). A longitudinal study of the effects of family, friends, and school experiences on the psychological adjustment of ethnic minority, low-SES adolescents. *Journal of Adolescent Research*, *18*, 324-346.
- Welsh, W. N., Greene, J. R., & Jenkins, P. H. (1999). School disorder: The influence of individual, institutional and community factors. *Criminology*, *37*, 73-115.
- Williams, K. R., & Guerra, N. G. (2007). Prevalence and predictors of Internet bullying. *Journal of Adolescent Health*, *41*, S14-S21.
- Wilson, D. (2004). The interface of school climate and school connectedness and relationships with aggression and victimization. *Journal of School Health*, *74*, 293-299.
- Witcher, A.E. (1993). Assessing School Climate: An Important Step for Enhancing School Quality. *NASSP Bulletin*, *77*, 1-5.
- Wolfe, E. W., Ray, L. M., & Harris, D. C. (2004). A Rasch Analysis of Three Measures of Teacher Perception Generated from the School and Staffing Survey. *Educational and Psychological Measurement*, *64*, 842-860.
- Worrell, F. C., & Hale, R. L. (2001). The relationship of hope in the future and perceived school climate to school completion. *School Psychology Quarterly*, *16*, 370-388.

Appendix A

Email Invitation

Dear PREVNet member,

My name is Tanuja Miura and I am a graduate student member of PREVNet working with Dr. David Smith at the University of Ottawa. We are currently conducting a study on school climate and what it means. We would like to invite you to participate in our research by completing a brief questionnaire.

School climate is a complex and multidimensional construct that is an essential part of the school experience. Research has shown that positive school climate has been associated with a variety of important outcomes, such as less delinquency and student victimization, fewer behavioural and emotional problems for students, students' smooth and easy transition to a new school, academic success, and increased job satisfaction for school personnel. Despite the importance of school climate to students' intellectual and social development, there is *no consensus about what the term means and what sub-dimensions it encompasses*.

The goal of this study is to develop a consensus among experts on the dimensions that are essential to the construct of school climate and hence should be included in a school climate measure that would be useful in evaluating school improvement initiatives, such as bullying prevention programs.

We would like to invite you, as a researcher or graduate student member of PREVNet, to offer your expertise in the area of bullying and victimization while participating as a member of the expert panel in this Delphi poll. With this method, we solicit and aggregate the opinions of experts to develop consensus within a designated field. It requires two administrations of the questionnaire. After the first administration, feedback will be given about pooled individual responses. Panelists will then be asked to review their original responses in light of this feedback and revise them if appropriate.

Please follow this link to the consent text and web-based questionnaire:
http://www.surveymonkey.com/s.aspx?sm=3EZdAWByQFViEP2ObKslrQ_3d_3d

If you have any questions about the study, please contact Tanuja Miura at

Thank you for your time.

Sincerely,

Tanuja Miura (Master's Student)
Faculty of Education, University of Ottawa

Dr. David Smith (Supervisor)
Associate professor and vice-dean (research)
Faculty of Education, University of Ottawa

Consent Text

Title of Study: School Climate: Development of a Comprehensive Definition

Tanuja Miura (Master's Student)
Faculty of Education, University of Ottawa

Dr. David Smith (Supervisor)
Associate professor and vice-dean (research)
Faculty of Education, University of Ottawa

Invitation to Participate: You are invited to participate in the abovementioned research study conducted by Tanuja Miura under the supervision of Dr. David Smith.

Purpose of the Study: The purpose of the study is to reach consensus among experts on the dimensions that are essential to the school climate construct and hence should be included in a school climate measure that would be useful in evaluating school improvement initiatives, such as bullying prevention programs.

Participation: Participation in this study will consist of two administrations of a web-based questionnaire at 4 weeks interval. It will take approximately 15 minutes to complete the questionnaire at each administration. For the questionnaire, we ask that you respond to dimensions that could be used in a measure of school climate.

Risks: The main inconvenience posed to you as a participant in this study is the time required to answer the questionnaires.

Benefits: Your participation in this study will make an important contribution to advance knowledge about the school climate construct by providing a specific and empirically-based operational definition. This new knowledge could then potentially be used to develop a valid school climate scale for assessing school improvement programs and initiatives (which, in fact, is the mission of the PREVNet network: to develop valid assessment instruments and evidence-based interventions to reduce bullying and victimization and promote positive, healthy relationships among children).

If you choose to participate, you will be provided with a summary of the final results of the Delphi poll for your interest.

Confidentiality and anonymity: You are assured that the information that you share will remain confidential. You will not be quoted and the public presentation of the study results will be limited to pooled data. You will be asked to provide an email address which will be used for communication of the result summary reports. However, confidentiality will be ensured by

removal of the email address from your questionnaire responses when the data are uploaded to the database. Email addresses will be removed from the database and replaced by a unique code. A key linking identifying codes to email addresses will be kept in a locked cabinet which can only be accessed by the researchers. **Anonymity** will not be guaranteed because you will be asked to provide your email address in order to facilitate the distribution of summary reports, as per the Delphi poll methodology. This poses no conceivable risk to your person.

Conservation of data: After completion of the study, the data collected from the web-based questionnaires will be transferred to a spreadsheet, printed, and stored in hard-copy in a locked cabinet in the research supervisor's office. Access to the data will be limited to the researchers, Tanuja Miura and Dr. David Smith. The data will be conserved for 5 years following the publication of the research results, after which it will be shredded and discarded.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you can withdraw from the study at any time and/or refuse to answer any questions, without suffering any negative consequences. If you choose to withdraw, you should contact Tanuja Miura by email at _____ to indicate that you wish to withdraw from the study. You will need to provide the email address that you had provided for communication purposes during the study. This information will be used to identify the data you provided, so it can then be deleted from the database.

Acceptance: By clicking the 'I accept' link at the bottom of this page, you agree to participate in the above research study conducted by Tanuja Miura of the Faculty of Education at the University of Ottawa, under the supervision of Dr. David Smith.

If you have any questions about the study, please contact Tanuja Miura or Dr. David Smith.

If you have any questions regarding the ethical conduct of this study, please contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 159, Ottawa, ON K1N 6N5
Tel.: (613) 562-5841
Email: ethics@uottawa.ca

I accept

I decline

DELPHI POLL QUESTIONNAIRE

Demographics:

- a) What is your sex? M F
- b) In which province do you work?
- c) What is your status with PREVNet? Graduate Student Researcher
- d) How many years have you been a member of PREVNet?
- e) How many years experience do you have as a researcher (beginning with any postgraduate research)?
- f) Please provide up to 5 *keywords* to describe your current research area.
- g) Have you conducted school-based research? Yes No
- h) Please provide an *email address* for communication purposes during this study.

Note: This email address will only be used in order to facilitate the distribution of summary reports, as per the Delphi poll methodology.

The following questions refer to a list of school climate *dimensions* and *sample scale items* that emerged from a systematic thematic analysis of the school climate literature from the past decade. This content analysis was based upon empirical studies in which school climate was a variable that was measured quantitatively.

Directions:

There are 16 items in this questionnaire.

- A. Please respond to each dimension by indicating to what extent (0-5) you believe that the dimension is **essential to the school climate construct** (and hence should be included in a school climate measure).

- 0 = not a part of the construct
- 1 = of low importance
- 2 = somewhat important
- 3 = moderately important
- 4 = highly important
- 5 = absolutely essential

- B. Please specify which group(s) of individuals is in the **best position to provide information** regarding this dimension.

Dimension	Description	Sample Scale Items	A. Importance (please circle your response)					B. Best Informant(s) (you may check more than one)					
								Administrators	Parents/Community	Students	Support Staff	Teachers	
1. Academic Orientation	Academic focus; achievement press; instructional management; achievement motivation; emphasis on academic learning	<ul style="list-style-type: none"> ▪ There is an academic emphasis and belief that all can learn. ▪ The teachers in this school push the students pretty hard in their academic subjects. ▪ Students seek extra work so they can get good grades. ▪ The school gives honours and rewards for academic achievement. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.	Administrator-Teacher Relationships	Collegial engagement (characterized by behaviour that is supportive and egalitarian)	<ul style="list-style-type: none"> ▪ The principal discusses classroom issues with teachers. ▪ The administrator’s behaviour toward the staff is supportive and encouraging. ▪ Teachers feel free to communicate with the principal. ▪ The principal treats all faculty members as his or her equal. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Characteristics of Administrators	Behaviour; influence; leadership style: supportive, directive, restrictive	<ul style="list-style-type: none"> ▪ The principal is friendly and approachable. ▪ The principal lets staff members know what is expected of them. ▪ The school administrator monitors closely the classroom activities of teachers. ▪ The principal explores all sides of the topics and admits that other opinions exist. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Characteristics of Parents/Community	Level of involvement with school, cooperation, collaboration, support	<ul style="list-style-type: none"> ▪ Parents are eager to be involved in school activities. ▪ Parents value the opinions of teachers. ▪ Parents press for school improvement. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Characteristics of Students	Absenteeism; disruption of or skipping of classes; use of alcohol or drugs; enjoyment of school; social skills; sense of belonging or connectedness; morale	<ul style="list-style-type: none"> ▪ Students in this school are well-behaved even when the teachers are not watching them. ▪ Students skip class sometimes at this school. ▪ Students would rather attend this school than transfer to another. ▪ Students feel that 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

			they belong here.												
6.	Characteristics of Teachers	Absenteeism; frequency of changes in the teaching staff; work stress; feelings of autonomy; financial security; efficacy; professionalism and dedication; morale	<ul style="list-style-type: none"> ▪ Teachers accomplish their jobs with enthusiasm. ▪ Teachers return promptly the graded tests and explain the expected answers ▪ Teachers attend in-service and other professional development courses. ▪ Teacher morale is high. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Disciplinary Climate/ Order and Safety	Approach to discipline; perceptions of the school safety; global safety	<ul style="list-style-type: none"> ▪ When students cross the line, the principal and the teachers intervene in an assertive but fair manner. ▪ The school is a safe place for students. ▪ Teachers and other workers feel safe in the school building before and after school. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Openness, Innovation, and Change Capacity	Openness in communication, orientation to change, opportunity for teacher input into decision-making; innovation	<ul style="list-style-type: none"> ▪ Staff talks openly about how they work with students. ▪ Teachers make an effort to coordinate the content of courses across disciplines. ▪ Teachers are encouraged to innovate in their classroom rather than to conform. ▪ Teachers participate in decision making on important matters. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Opportunity for Participation	Opportunities for school involvement; participation in decision making	<ul style="list-style-type: none"> ▪ Students get involved in organizing school events. ▪ Students can be in sports, music, and 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

			<p>plays even if they are not very talented.</p> <ul style="list-style-type: none"> Parents and students participate in making the rules in this school. 											
10.	Parent/Community-School Relationships	Positive involvement of parents; parent and community influence on school policy and functioning; community pressure	<ul style="list-style-type: none"> Staff actively involves parents in delivering services for students. The school communicates with parents regarding mental health and behavioural issues of their children. Parents have a say in school policy. The principal responds to pressure from parents. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Physical Environment	Maintenance of school grounds and the classroom; resources; availability of materials	<ul style="list-style-type: none"> The staff takes good care of school grounds. The school is clean and well maintained. The school library includes an adequate selection of books and periodicals. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	School Policies/Values	Perceived fairness and clarity of rules; encouragement of the development of social values; institutional integrity; organizational health; commitment to diversity	<ul style="list-style-type: none"> The rules at our school are fair. The school has clear goals and expectations regarding the behaviour of students. The school has policies in place to promote the health and well-being of students. The school actively encourages students to understand and respect the differences of others. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	Student-Student	Friction; cohesion;	<ul style="list-style-type: none"> Students care about each other. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Relationships	competition; collaboration; intimidation	<ul style="list-style-type: none"> ▪ Students respect one another. ▪ Students make new students feel welcome. ▪ Students make fun of students who are different. 												
14.	Student-Teacher Relationships	Teachers' commitment to students; teachers' support of students; extent to which students and teachers respect each other; guidance	<ul style="list-style-type: none"> ▪ Teachers are patient when a student has trouble learning. ▪ In this school, teachers and students care about each other. ▪ Students are comfortable talking to teachers about their problems. ▪ Most students are helpful and cooperative to teachers. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15.	Teacher-Teacher Relationships	Staff collaboration; colleague support; collegial engagement; sharing of resources, degree of commonality of purpose	<ul style="list-style-type: none"> ▪ There is a great deal of cooperative effort among staff. ▪ There is a feeling of trust and confidence among the staff. ▪ Colleagues share your beliefs and values about school mission. ▪ Teachers respect the professional competence of their colleagues. 	0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16.	Other, Please specify:			0	1	2	3	4	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Please provide any additional comments or suggestions that you may have (*optional*).

Thank you very much for your time.
We appreciate your participation in our study.

Tanuja Miura and
Dr. David Smith

Appendix B

School Climate Dimensional Components Measured per Article.

Article	Individual				Interpersonal					Organizational				
	Students	Teachers	Administrators	Parents/community	Student-student	Student-teacher	Teacher-teacher	Teacher-administrator	Parents/community-school	Disciplinary climate/ order and safety	School policies/ values	Academic orientation	Openness, innovation, and change capacity	Physical environment
Astor, Benbenishty, Zeira, & Vinokur (2002)	s	s				s				s			s	s
Astor, Benbenishty, Vinokur, & Zeira (2006)		s				s				s			s	
Billingsley, Carlson, & Klein (2004)		t	t				t	t					t	
Birnbaum et al. (2005)	s	s			s	s							s	
Bomotti, Ginsberg, & Cobb (1999)		t					t			t	t			t
Brand et al. (2008)					s	t,s				t,s	t,s	t,s	s	s

Brookmeyer, Fanti, & Henrich (2006)	s	s		s		s			
Brown & Medway (2007)		t	t		t	t		t	t
Bruns, Walrath, Glass-Siegel, & Weist (2004)		t			t		t	t	
Busseri, Willoughby, Chalmers, & Bogaert (2006)	s	s	s	s	s			s	s
Cassinerio, & LaneGaron (2006)	s			s					
Chen (2007)	a								
Chen & Weikart (2008)	a								
Corten, & Dronkers (2006)	a	a		a	a			a	
Crooks et al. (2007)				s		s		s	
Dellar (1999)		t	t		t	t			t

Desimone, Finn- Stevenson, & Henrich (2000)		t	t		t,p	t		t,p	t,p
DiPaola, & Tschannen- Moran (2001)		t	t					t	
Dronkers, & Robert (2008)	s,a	a			s		s	s	
Esposito (1999)	t,p	t,p	t,p		t,p	t,p	t,p	t,p	t,p
Farmer (1999)		a			a			a,p	
Frey et al. (2009)					s		s	s	
Furlong et al. (2005)		s	s		s		s		s
Furlong, Casas, Corral, Chung, & Bates (1997)	s				s		s		
Gaziel (2004)		t	t			t	t		
Gottfredson et al. (2005)		t	t		t	t		s,t	t
Graham, Bellmore, & Mize (2006)	s						s	s	

Grayson, & Alvarez (2008)	t		t		t	t			t		t	t
Gregory, Henry, & Schoeny (2007)			t	t		s	t,s	t			t	
Griffith (1999)	s	s	s		s	s			s		s	s
Griffith (2000)			p	p								
Griffith (2004)			p	p								
Hanna (1998)	t	t	t		t	t			t		t	t
Hoy, Hannum, & Tschannen-Moran (1998)			t	t		t	t		t		t	t
Hoy, Smith, & Sweetland (2003)	t	t	t				t	t	t			
Israelashvili, & Wegman-Rozi (2007)					s	s			s	s	s	s
Johnson, Johnson, Gott, & Zimmerman (1997)	s	s	s			s			s	s		s
Johnson, & Stevens (2006)						t	t				t	t

Johnson, Stevens, & Zvoch (2007)	t				t	t			t	t
Kallestad, Olweus, & Alsaker (1998)						t	t		t	t
Khoury- Kassabri, Astor, & Benbenishty (2007)					s				s	s
Khoury- Kassabri, Astor, & Benbenishty (2009)					s				s	s
Khoury- Kassabri, Benbenishty, & Astor (2005)					s				s	s
Kitsantas, Ware, & Martinez-Arias (2004)	s	s	s		s			s	s	
Koth, Bradshaw, & Leaf (2008)	s							s	s	
Kuperminc, Leadbeater, & Blatt (2001)					s	s	s		s	s
Kuperminc, Leadbeater, Emmons, & Blatt (1997)					s	s	s		s	s

LaneGaron, & Richardson (2003)	s			s				s		
Loukas, & Murphy (2007)	s			s						
Loukas, & Robinson (2004)	s			s						
Loukas, Suzuki, & Horton (2006)	s			s						
Ma, & Wilkins (2002)	t	t	t	t	t	t	t	t	t	t
Ma (2003), Ma (2002)	s	s		s				s	s	s
Mathews, Boon, Flisher, & Schaalma (2006)	t							t	t	t
McDonald et al. (2007)	x		x		x	x	x	x		x
Murray (1997)	s		s	s	s			s	s	s
Papanastasiou, & Koutselini (2003)	s				s					
Papanastasiou, & Papanastasiou (2004)	s			s				s		

Parcel et al. (2003)	t,a	t,a			t,a	t,a				
Pashiardis (2008)	s			s	s			s	s	s
Perkins, & Jones (2004)	s	s			s					
Perkins, Luster, & Jank (2002)		s			s					
Quinn et al. (2006)	t,s	t	t	s	t,s			t,s	t,s	s t t
Ross, & Lowther (2003)		t	t	t	t	t	t	t	t	t
Ross et al. (2007)			t	t	t	t		t	t	t
Ross et al. (2004)			t	t	t	t		t	t	t
Ruus et al. (2007)					s	s			s	s s
Saboet al. (1996)	t	t	t			t			t	t t
Sava (2002)		t	t			t	t			t

Schmitt, Sacco, Ramey, Ramey, & Chan (1999)	t	t	t	t	t	t	t	t	t	t
Schulteet al. (2002)	t,a	t,a		t,a	t,a					
Shaunessy, Suldo, Hardesty, & Shaffer (2006)		s		s	s		s		s	s
Sherbloom, Marshall, & Sherbloom (2006)	s,p	t	t		s		t,s, p			
Slaughter- Defoe, & Carlson (1996)	s	s	s	s	s		s			
Smith, Daunic, Miller, & Robinson (2002)	t	t		t	t		t	t		
Sterbinsky, Ross, & Redfield (2006)		t	t			t	t	t	t	t
Suldo, Shaffer, & Riley (2008)				s	s		s		s	
Suldo, Shaffer, & Shaunessy (2008)				s	s		s		s	
Timmerman (2004)	s			s	s		s			
Tschannen- Moran (2001)		t	t			t		t		

Uline, & Tschannen- Moran (2008)		t	t					t		
Van Horn & Lee (2003)	t,a	t,a	t,a	t,a	t,a	t,a	t,a	t,a	t,a	t,a
Vieno, Perkins, Smith, & Santinello (2005).					s			s		s
Vuillr, & Schenkel (2001)	s			s	s					s
Wade, & Stafford (2003)	t,s	t,s		t,s	t,s		t,s	t,s	t,s	t,s
Way, & Greene (2006)				s	s		s			
Way, Reddy & Rhodes (2007)				s	s			s		
Way, & Robinson (2003)				s	s		s			
Williams, & Guerra (2007)	s				s		s	s		s
Wilson (2004)	s			s	s		s	s		s
Wolfe, Ray, & Harris (2004)						t	t			t

