

CONTEXTUAL RISK AND PROTECTIVE FACTORS IN EARLY ADOLESCENT
SCHOOLING: PREDICTORS OF MULTIDIMENSIONAL
STUDENT ENGAGEMENT

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ABSTRACT

This study examined the capacity of school risk and protective contextual factors to predict emotional, cognitive and behavioural student engagement. Three hundred and twenty-nine students completed an online survey at the onset and then again near the end of their grade nine school year. Classroom, peer, and school wide contextual conditions (predictor variables), measured at time one predicted components of engagement (criterion variables) at time two. This prospective longitudinal nonexperimental predictive study found that, when examining the total sample, classroom protective factors (Teacher Academic Support, Peer Personal Support and Students' Perception of Cohesion) were the most predictive of the three dimensions of student engagement examined in this study. When examining subgroups of students—those displaying violent risk behaviour, experiencing low academic success, or suspended within the previous year—additional contextual factors emerged as significant in the prediction of student engagement. Results suggest positive relationships at school are important in the development of student engagement, especially for those students at-risk for disengagement. Consequently, teachers and school administrators should strategically plan for positive peer to peer and teacher to student relationships within learning community classrooms. Providing students with support in developing relationship skills and teachers with training in how to build healthy classroom climates seems essential to school improvement plans.

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CHAPTER ONE

INTRODUCTION

Education is facing significant challenges. Society is asking for greater accountability from schools; demanding elevated standards for learning along with quantifiable evidence that the school system is working. Provincial, national, and international large-scale assessments such as the Organization for Economic Co-operation and Development's Programme for International Student Assessment (PISA), allow comparisons of student achievement between schools, provinces and countries, and has spawned what Sergiovanni (2000) terms "the national and international brain race" (pg. 57). To attain a higher educational ranking in the global community, political influence champions initiatives designed to increase academic achievement.

A great deal of pressure for increased achievement falls on individual teachers to provide improved instruction, and for administrators to facilitate this improvement through strong instructional leadership. Accordingly, school staffs strive to build collaborative cultures where the development of professional learning communities might fuel the quest for higher achievement. Teachers in collaborative learning communities endeavour to learn from each other while administrators use their ingenuity to afford the release time indispensable for efficient collaboration (Barth, 1990; Deal & Peterson, 1999; Fullan, 1991; Fullan & Hargreaves, 1996; Sergiovanni, 1994).

Practice in an abundance of school improvement initiatives is to measure success through group administered standardized achievement tests. These tests provide important information about one outcome—student academic success—but do not provide insight into the complex school community, the context necessary to nurture heightened

achievement. Consequently, to reach a deeper understanding of the context that fosters high achievement scores, the study of high achieving schools has identified common contextual conditions as well as common outcomes confirmed to occur in concert with achievement. One such comorbid outcome, established through strong scientific evidence is student engagement. Higher levels of student achievement occur in schools with higher engagement scores (Fin, 1993; Fin & Rock, 1997; Furlong, Whipple, St. Jean, Simenal, Stoliz & Punthana, 2003; Willms, 2003).

Simply put, student engagement is the belief by students that they “belong” in their school community where they are involved members. Engaged students believe that school instruction facilitates learning relevant to their worlds. Consequently, they actively participate in learning.

Requirements for school engagement include students' experiencing high academic expectations delivered with individualised support for learning (Institute on Medicine, 2004; Klem & Connell, 2003), positive adult/student relationships (Connell & Wellborn, 1991; Osterman, 2000) in a climate of physical, emotional, and intellectual safety (Butcher & Manning, 2005; Connell & Wellborn, 1991; Lee & Smith, 1999). Evidence demonstrates that increased student engagement promotes greater motivation, classroom participation, and improved attendance, which in turn positively influence school achievement (Connell & Wellborn, 1991; Croninger & Lee, 2001; Klem & Connell, 2003; Lee & Smith, 1999; Resnick et. al, 1997). Similarly, there is significant evidence that engaged students are less likely to exhibit disruptive behaviour, school violence, substance use, emotional distress, and early age sexual activity (Institute on

Medicine, 2004; Goodenow, 1993a; Lee, Smith, Perry, & Smylie, 1999, Wilson, Gottfredson, & Najaka, 2001) .

Given that the bulk of evidence articulating the positive benefits of student engagement, schools would do well to purposely plan for increased student engagement. However, the identification of school conditions necessary for high levels of student engagement does not provide a complete recipe; the conditions themselves are often evasive and difficult to create in school contexts.

Successful school improvement requires acting collectively. Members of a learning community share a common ideology (Baker, Terry, Bridger, & Winsor, 1997) when the term “community” finds meaning through the relationships of its members, and the formation of mutual values and goals. Though many school improvement efforts identify a common goal, advancing teaching and learning, a worthwhile yet contracted tactic for “engaging” students in this effort is to focus on one approach: improving instruction. The universal need for a sense of belonging, of connection to others, and to ideas and values provides a unique opportunity in schools. Unequivocally, education benefits from healthy, supportive relationships between and among students, educators, and community members (Sergiovanni, 1994).

To cognitively, emotionally, and behaviourally ‘engage’ all students in learning, and to build a sense of belonging and community membership, it may be necessary to restructure schools. For comprehensive school reform to be successful, educators need to develop a deeper understanding of the school contextual factors which are associated with engaging students.

Purpose of the Study

The purpose of this study was to explore the effects of three school microsystem context factors on student engagement: peer context factors, classroom context factors, and school-wide context factors. As well as considering the effects of the contexts on the total student sample, this study explored different subpopulations within the sample: males and females, suspended students, those students who were not academically successful, and students who exhibited violent risk behaviour. If school professionals understand more about conditions within school contexts that foster students' engagement, they could plan more effectively. Student engagement provides myriad benefits both during school and after graduation as engaged students are more likely to experience academic success, and less likely to participate in high-risk behaviour such as early sexual activity, drug and alcohol use and violent behaviour. Students who were engaged in school are more likely to become adults with self-efficacy in the academic, social, and emotional realms, and to adopt an orientation as a life-long learner (Furlong, Whipple, St. Jean, Simenal, Stolz, & Punthuna, 2003).

Research Questions

The research questions that guided this study were:

- I. To what extent are students' perceptions of selected school contexts predictive of three dimensions of school engagement: emotional, cognitive and behavioural?
- II. To what extent is the predictive power of students' perceptions of contextual conditions for student engagement different for male and female students?

- III. To what extent is there an additive effect, when school context factors work together, in the prediction of student engagement?
- IV. To what extent is the predictive power of specific at-risk students' perceptions (suspended students, academically unsuccessful students, and students displaying violent risk behaviour) of contextual conditions, predictive of emotional, cognitive and behavioural engagement?

Significance of the Study

The goal of this study was to identify school microsystem predictors of student engagement through a deeper understanding of how school contextual relationships promote or inhibit the development of student engagement. Student engagement flourishes or atrophies in a variety of school contexts: peer context, classroom context, and school-wide context. Fredricks, Blumenfeld, and Paris (2004) promoted the acceptance of engagement as a multidimensional construct and encouraged the examination of the components individually, within the same study, to facilitate deeper insight into students' engagement. They posited,

Robust bodies of work address each of the components separately, but considering engagement as a multidimensional construct argues for examining antecedents and consequences of behaviour, emotion and cognition simultaneously and dynamically, to test for additive or interactive effects. (p. 61)

The researcher acknowledged the multidimensionality of student engagement and sought to understand more about the relationships between the peer group, the classroom,

and the school, with cognitive, emotional, and behavioural engagement. This study followed the suggestion of Fredricks et al. (2004) in simultaneously studying school microsystem antecedents of student engagement and explored possible protective or risk contextual school factors and their relationship with student engagement (behavioural, emotional, and cognitive).

This examination is important as engagement is a protective factor (Finn, 1993; Finn & Rock, 1997; Willms, 2003; Wolfe, Jaffe, & Crooks, 2003) promoting positive proximal outcomes for students such as academic achievement and reduction in high-risk behaviour. An increasing body of research identifies the vital function that engagement plays in student learning and that some educational practices and school conditions may facilitate student disengagement. It is important for educators to understand more about the components of student engagement and how school conditions may encourage or inhibit their development.

A predominance of previous research on engagement focused on students as a whole (sometimes delineated by age and/or grade, elementary/high school), while this study examined populations of students at-risk for negative life trajectories within the larger student sample. It also looked for differences in the school contextual conditions which predicted engagement for male and female students. Engagement is undoubtedly experienced differently by individual students and groups of students. This examination acknowledges the probability of those differences and begins to look at subgroups of students who are at-risk for disengagement.

The focus of this thesis is to examine the multidimensionality of the phrase “student engagement” and to begin to develop a context-specific understanding of the term. As

well, it considers how to promote its development for all students. Educators committed to school improvement and the fostering of student engagement, as well as education policy makers may benefit from the understanding this study generated.

Overview of Study

Through the combination of Bronfenbrenner's (1979) bioecological topology of human development and Furlong et al.'s (2003) school engagement framework, this study explored how school contextual promotive, protective and risk factors worked together in an additive or interactive manner to influence three components of student engagement (cognitive, emotional and behavioural). Specifically, a number of scales gauged the capacity of students' perceptions of school contextual relationships (Predictive Variables), to predict components of student engagement (Criterion Variables). Data were collected from two student groups in two consecutive years. In total, 329 grade nine students in six Saskatchewan schools participated. Students completed pre and post on-line surveys at the beginning and at the end of their grade nine school year in this nonexperimental quantitative study. Written consent from parents and written assent from students secured a participation rate of 96%. Students who participated were predominately white and from the middle class, while participating schools included both K-12 and high school structures.

This investigation used data from the *Saskatchewan Fourth R Program Evaluation* which measured the effectiveness of a grade nine universal prevention program which targets the development of relationship skills and the reduction of high-risk behaviour. *The Fourth R Program* was developed by the Centre for Prevention Science at the Centre

for Addiction and Mental Health at the University of Western Ontario. A national implementation of the program, funded by The Royal LePage Foundation, facilitated the program's rollout in Saskatchewan in 1996. Thirty-five schools implemented *The Fourth R Program* over a three year period (1996-1999) and six of those schools volunteered as participants in the program's evaluation (see Table 6).

Paradigmatic Assumptions

The research design for this exploration of school contextual predictors of student engagement emerged from a philosophical perspective of realistic positivism. In Burrell and Morgan's framework (1979) realism acknowledges that the social world exists outside an individual's perception and that there are ultimate principles (p. 4), whereas positivism seeks to understand and predict through observing socialization norms and establishing cause and effect (p. 4). The researcher believed this study's methodology aligned with her understanding of the world. She examined the social world within schools looking for ways that empirically substantiated adolescent contextual risk and protective factors predicted the development of student engagement.

Limitations

The study has the following limitations:

1. Data may not be representative of the larger population of students, and therefore results may not generalize beyond the specific population from which the sample was drawn.
2. Due to the longitudinal design of the study, a number of respondents available at the initial data collection were unavailable or unwilling to participate in the second data collection.

3. The researcher did not report all features of *The Fourth R Survey* data set, as not all of the constructs measured in the data collection were relevant to this investigation.
4. The study is limited to data collected from one grade level—grade nine.
5. The schools that participated in the data collection were volunteers and therefore do not represent a random sample.

Delimitations

The nature of the source, analysis, and data delimit the inquiry of the study in the following manner:

1. The data used in this study was part of a larger data collection in six schools: *The Fourth R Project* data collection. The data identified for use in this study was that which was most relevant for understanding the development of student engagement.
2. Data collection included an online survey collection from the same sample of students in September of 2005/2006 (time one) and in May of 2006/2007 (time two).
3. Grade nine students, surveyed as part of the larger *Fourth R Program Evaluation*, were the participants for this investigation.
4. The school contexts for examination were the peer context, the classroom context, and the school wide context.

Assumptions

In this study, the following assumptions apply:

1. The survey scales used with participants were sufficiently comprehensive and yielded scores that could be reliably and validly interpreted as a conceptualization of each

student's perception of the school contexts and the three dimensions of student engagement.

2. All respondents answered survey questions honestly and to the best of their ability.

Definition of Terms

The intent of the definitions provided herein was to clarify meanings of critical concepts integral to the conceptualization of the study.

- **Adolescence** refers to the developmental phase of puberty including hormonal changes, development of adult sex characteristics, and physical growth spurts; all accompanied by increased interest in dating and sexual relationships, greater parent-child conflict and in girls, increased depression. Cognitive capacity increases during adolescence but abilities are often not applied to longer-term future planning which make adolescents more vulnerable to engaging in risky behaviours, which can affect their safety (Biglan, Brennan, Foster, & Holder, 2005; Wachs, 2000).
- **Bioecological Systems Theory** explains development in terms of the relationships between people and the context or environment. A model of nested circles demonstrates the interrelationships between individual and contextual variables that affect development (Bronfenbrenner, 1979).
- **Contextual Factors** considered in this study are those set out in Furlong et al.'s (2003) conceptualization of school engagement: the student context, the peer context, the classroom context, and the school-wide context.
- **Microsystem** comprises any context variables to which people have direct contact, such as their families, schools, church, and community (Bronfenbrenner, 1979).

- **Promotional Factors** are those factors that have positive effects on the life of an individual regardless of that individual's level of exposure to risk (Jenson & Fraser, 2005).
- **Protective factors** nullify or soften a person's response to some environmental danger (Rutter, 1985). Fraser and Terzian (2005) describe protective factors as, "resources...individual or environmental...that minimize the impact of risk (p.12).
- **Proximal Outcomes** are those developmental outcomes, which are resultant of proximal processes. Examples of proximal outcomes are behavioural adjustment, psychological distress, competence, and character (Bronfenbrenner & Evans, 2000).
- **Proximal Processes** Throughout the life course, human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate external environment. Such enduring forms of interaction in the immediate environment are referred to as proximal processes. (Bronfenbrenner & Morris, 1998, p. 996) "In short, proximal processes function as the engines of development" (Bronfenbrenner & Evans, 2000, p.118).
- **Risk Factors** are those, which increase the probability for engaging in negative behaviour (Hawkins, Catalano, & Miller, 1992).
- **Student Engagement** refers to student involvement in academic and non-academic school activities, student valuing of schooling outcomes and student feelings of belonging in the school community. In this document, it is synonymous with the term school engagement.

Organization of the Thesis

Chapter 1 presented the introduction, statement of the problem, research questions, significance of the study, and a definition of terms, together with the limitations, delimitations, and assumptions of the study. Chapter 2 contains a review of related literature and research relevant to student engagement. As well, it presents the conceptual framework used to guide the investigation. The methodology and procedures used to collect data for the investigation comprise Chapter 3. Study results and analysis comprise Chapter 4, while Chapter 5 contains a discussion of the results along with study limitations and implications for school restructuring, and implications for future research.

CHAPTER TWO

LITERATURE REVIEW

This chapter provides an extensive review of the literature and research related to student engagement, concluding with a section outlining the strengths and weaknesses of previous study and suggestions for future investigations. As well, it provides the conceptual framework used to guide this investigation, which incorporated Furlong et al.'s (2003) conceptualization of student engagement. This framework is embedded in Bronfenbrenner's (1979) bioecological perspective of human development, illuminating the notions of student risk and protective factors in school contexts as influential in adolescent development. The following sections comprise Chapter Two: (a) Student Engagement; (b) Student Engagement Correlates; (c) Student Engagement as a Multidimensional Construct; (d) A Summary of the Research; (e) the Theoretical Framework; (f) A Bioecological Perspective of Risk and Protective Factors; and (g) An Integrated Conceptual Framework.

Student Engagement

Student engagement describes student involvement in academic and non-academic school activities, student valuing of school outcomes and student feelings of belonging in the school community. Definitions often comprise a behavioural component exhibited through involvement in the school community (e.g., Finn, 1993, 1989; Wehlage, Rutter, Smith, Lesko, and Fernandez, 1989), an emotional component referring to students' sense of belonging, identification with school and acceptance of school values (Finn, 1993, Finn and Rock, 1997; Goodenow, 1993a; Goodenow and Grady,

1993; Voelkl, 1995, 1996, 1997; Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989) and more recently, a cognitive component actualized through an investment in learning (Fredricks et al., 2004; Newmann, Wehlage, & Lamborn, 1992).

Often conceptualized through observable actions, the behavioural component of engagement is observed through activities such as school attendance, preparedness for class, assignment completion, on-task behaviour, and involvement in extra-curricular sports or special subject clubs. Emotional engagement, as described by Fredricks et al. (2004), is students' affective responses evoked by school contexts and are not so easily observed. Finally, the cognitive component, is "...the student's psychological investment in and effort directed toward learning, understanding or mastering the knowledge, skill or crafts that academic work is intended to promote" (Newmann et al., 1992, p.17). Though these descriptions are offered to provide a general understanding of student engagement as a construct, the literature is inconsistent in the conceptualization of student engagement; the construct name, its definition, how it's measured as well as school conditions necessary for its promotion.

Evolution of the Term “Student Engagement”

Exploring the evolution of the term “student engagement” helps one to appreciate the variability in its definition in the literature. Libbey (2004) points out that, when examining the term “student engagement”, there are myriad connected and intersecting constructs represented by a multitude of labels. School attachment, school connectedness, school satisfaction, youth engagement, and student belonging are examples of similar terms. Not only are there countless analogous terms, there is also inconsistency in the meaning of “student engagement” and therefore, inconsistency in the manner in which it

is measured (Jimerson, Campos, & Greif, 2003).

The literature investigating student engagement ostensibly emerged from the investigation of negative school outcomes such as misconduct, school dropout, and poor achievement. In combination, the investigation of student motivation extended the understanding of the student engagement construct. In Sullivan's (1953) self-system or conceptualization of self, a person's self-perceptions such as self-efficacy, self-esteem, locus of control, and motivation, are believed to be catalysts for engagement (Wellborn, 1991), also referred to as connectedness (Weiner, 1990), a sense of relatedness (Connell, 1990), or belonging (Goodenow, 1993a).

Pierson and Connell's self-systems theory (1992) conceived that once individuals filled their need for autonomy, competence, and relatedness, they became engaged in school. This model traces the pathways between interpersonal relationships, engagement, and academic performance and suggests that when students perceive support and association from significant adults, such as parents and teachers, they are more engaged in school and more motivated toward academic achievement. The self-system's conceptualization emphasizes the vital function that adults perform in influencing adolescents' notions of school and commitment toward it.

Hirshi (1969) posited that youth with positive feelings or bonds to school were less prone to engage in delinquent behaviour and more likely to achieve academic success. This concept of school bonds highlighted the association between youth engagement and delinquency. When examining school failure, Wehlage et al. (1989) conceptualized school membership as involving attachment to others, commitment to academic work, and to the school as well as to school involvement. Ultimately,

Wehlage's model became the foundation for Goodenow's Psychological Sense of School Membership scale (PSSM) (1993), an individually administered student survey used to quantify individual levels of student attachment to school.

Finn (1989) also believed engagement, or lack thereof, was a factor in school dropout. His model of student engagement included a psychological and a behavioural component. His psychological component of school engagement included interest, feelings of connectedness, and motivation, while his behavioural component included attendance, participation in educational activities, effort, and social interactions.

The previously cited studies, like many of the early examinations of student engagement, used the engagement construct to predict negative adolescent outcomes such as poor academic achievement, early school dropout, and delinquent behaviour. More recent investigations of engagement explored the antecedents of student engagement as well as the construct itself, as they acknowledge it as an important school outcome (Furrer & Skinner, 2003; Willms, 2003, 2010). A constant throughout the student engagement literature is the multidimensionality of the concept. There is not agreement, however, on the number and nature of its discrete dimensions.

Engagement as a Multidimensional Construct

Historically, engagement was often portrayed as having two components; frequently including a behavioural and an emotional subtype (Finn, 1989; Marks, 2000; Willms, 2003). Conceptualizations of student engagement increased in complexity as knowledge about student engagement expanded. Appleton, Christenson and Furlong (2008) argued for four components of engagement: academic, behavioural, cognitive and emotional. In this model, academic engagement incorporated factors like subject credits,

homework completion and time on task in classroom activities. Behavioural engagement included attendance, suspensions, extra-curricular and classroom participation, while emotional engagement included the student's affective reactions toward school including relationships to teachers and peers as well as feelings of belonging. Cognitive engagement encompassed self-regulation, personal goals, the alignment of schoolwork with future goals, and valuing learning. Willms, Friesen and Milton (2009) presented a model similar in terms of the factors that influence engagement, but presenting three dimensions of engagement designed to align with student developmental outcomes; social, academic, and intellectual. The definition of social engagement is meaningful participation in the life of the school, while academic engagement encompasses active participation and finally, intellectual engagement is termed serious emotional and cognitive investment in learning.

The identification of valuable developmental outcomes (and their indicators) tied to the dimensions of students engagement is an added consideration in models of student engagement. The outcomes described by Willms, Friesen and Milton (2009) provide an avenue for strategically increasing students' experiences in a manner that could lead to increasing student engagement at the universal, targeted and intensive level of support for students; interventions could be planned for the whole-school, classroom, small group or individual. As well, information from data collection surveys such as *What did you do in school today?* (Willms, Friesen, & Milton, 2009) could identify crucial areas for professional development for teachers.

Marzano and Pickering (2011), researchers whose goal is to enhance student achievement, presented a model where student engagement is at the heart of effective

teaching and is based on two related concepts, attention and engagement. They posit four emblematic questions to guide a teacher's exploration regarding student engagement in the classroom: (a) How do they feel?; (b) Are they interested?; (c) Do they believe this is important?; and (d) Can they do this?

In a meta-analysis of the research involving school engagement, Fredricks et al. (2004) described engagement as a multidimensional construct involving three components, namely, emotional engagement (feeling), behavioural engagement (behaving), and cognitive engagement (thinking). In this model, emotional engagement included feelings towards teachers, peers, and academic work and the school at large; including a student's sense of belonging, social bonds/networks, relationships with teachers, sense of school safety, and valuing of schooling outcomes (Fredrick's et al., 2004). Based on the work of Fredricks et al. (2004) and Bronfenbrenner (1979), Furlong et al.'s (2003) model of student engagement recognized student engagement as an intermediate proximal outcome, leading to competence and self-efficacy in the academic, social, and psychological domains of adolescent development as well as an outcome that promotes lifelong learning.

Emotional Engagement. Goodenow (1992) identified the import of emotional engagement; she suggested that there were differences between students and that while a sense of belonging was necessary for all students, for some, it was a fundamental need. Consequently, students need the classroom to be safe from condemnation and denigration by other students as well as by teachers (Phelan, Locke-Davidson, & Thanh Cao, 1992). Wehlage et al. (1989) also recognized individual student differences in the development of engagement. They identified that in addition to the classroom context, belonging was

also influenced by additional factors at the microsystem, exosystem and macrosystem levels that exist for each child. Students bring social and cultural conditions and personal problems to school that affect their level of engagement.

Attachment theorists believe that infants are born with the propensity to form attachments, and that people receive comfort through human contact (Goldstein, 1999). Basic human needs, such as belonging, security, autonomy, or competence, are the foundation for the development of self-system processes that are often used for predicting, interpreting, and responding in social situations (Connell & Wellborn, 1991; Deci & Ryan, 1985, 2000; Skinner, 1995). In times of difficulty, children who trust that others will be there to support them react with more resilience; they are more able to adapt to difficult conditions/situations. As a result, educational researchers continue to explore the impact of students' sense of belonging in their classrooms and schools (Goodenow, 1993a; Wentzel, 1998, 1999).

Both Finn (1989) and Goodenow (1992) conceptualized school belonging as feelings of acceptance and appreciation in school, as well as feeling part of and pride in school community membership. Finn (1989) believed that one's sense of self was constructed using one's sense of belonging or lack thereof. He described belonging in school as an impression of personal significance and membership in the school community. Goodenow (1991) believed that to achieve belonging at school, students needed to share the learning goals of their classroom microsystem. Osterman (2000) further explored the relationship of belonging and the sense of community membership and found that a community exists through members' experience of belonging and pride

of membership. She posited a sense of reciprocal appreciation and importance by members of school communities once their social and emotional needs were fulfilled.

While a valuable proximal outcome of school belongingness (a component of emotional engagement) is that students display stronger resilience, they also display strong self-systems, reporting higher levels of autonomy, competence, and motivation as well as relatively high levels of student engagement, and academic performance. Positive attitudes characterized students who reported a sense of belonging, both toward other community members and in their feelings regarding school, participation, and academic tasks (Osterman, 2000).

Behavioural Engagement. This dimension encompasses student participation such as the completion of homework, following the rules, and involvement in extracurricular activity (Fredricks et al., 2004). It refers to student actions and habits directed toward school community membership and learning such as class participation and attendance (Connell, Halper-Felsher, Clifford, Crichlow & Usinger, 1995; Lee & Smith, 1999; Steinberg, Brown, Dornbusch, 1996). As well, behavioural engagement includes efforts directed toward schoolwork, and commitment to everyday responsibilities essential for students to progress in school.

Much of the research on student engagement focused on behavioural engagement as the principal factor for measurement. Engagement indicators like attendance, classroom participation, school preparedness, academic effort, and homework completion are observable and easy to document (Finn, 1993; Finn & Rock, 1997; Marks, 2000). Students who exhibited behavioural engagement often attained higher grades and

functioned better on standardized tests. However, there is limited information regarding the predictors of behavioural engagement.

Steinberg et al. (1996) found that behavioural engagement was associated with intelligence. He found that students who did well academically exerted more effort and were more engaged in school. Additionally, high-performing students tended to set high goals for themselves, requiring positive school performance, which, in turn, provided the impetus for higher levels of behavioural engagement (Eccles, Wigfield, & Schiefel, 1998; Wentzel, 1999).

In the United States, Marks (2000) investigated behavioural engagement in elementary, middle and high school classes of social studies and mathematics. She identified gender differences as girls tended toward higher engagement levels than did boys. As well, engagement levels displayed as subject specific; a high level of engagement in social studies did not guarantee a high level of engagement in mathematics. In this study, high school students were more engaged in mathematics than they were in social studies. Most significantly, the relationship between time in school and behavioural engagement was an inverse one: As students reached higher-grade levels, engagement became weaker.

Empirical studies provide verification of the link between behavioural engagement and school outcomes. Academic achievement, performance on standardized tests, and school graduation are influenced by attendance, participation in academic pursuits, as well as extracurricular activities and schoolwork completion. How schools are structured and the degree to which they provide a classroom context and atmosphere that promotes student involvement and participation seems vitally important in

developing a school community conducive to behavioural engagement and ultimately, student learning (Zwarych, 2004).

Cognitive Engagement. This type of engagement is described as a mental ‘investment’ in learning; the commitment and reflection required to master academic skills, and to understand complex concepts (Fredricks et al., 2004). This component of engagement included a “mental mind set” or “buy in” in terms of the commitment or challenge to learning at school (Roeser, Midgley, & Urdan, 1996). Cognitively engaged students liked learning to be a challenging process, in which they saw themselves as actively pursuing learning goals possible for them to achieve (Snyder, Harris, Anderson, Holleran, & Irving, 1991; Wentzel, 1998).

The level of intensity of engagement is an indication of the measure of effort and enthusiasm a student devotes to learning (Fredricks et al., 2004). A lesser intensity of engagement could result in incomplete work and negatively impact student learning. An engaged student produces better quality work, attains greater insight, and retains the learning for longer periods. Interestingly, this perspective of cognitive engagement seems to suggest some aspects of behavioural engagement are outcomes of cognitive engagement or that for some students, cognitive engagement may be a prerequisite for behavioural engagement.

Similarly, Wentzel (1994) presented a number of initiating factors that facilitated students’ engagement in learning. She posited that students could be genuinely interested in the learning activity and like the feelings that accomplishment brings. As well, they might enjoy demonstrating their cognitive ability to their peers and/or their teacher. She also indicated that the underlying purpose for the pursuit of academic goals for some

students was social goals such as social responsibility, social relationship and social status. She believed that students pursued a multitude of academic and social goals within classroom and whole school contexts, though she did not suggest possible etiologies for the variation in factors facilitating student engagement.

Consideration of educational contexts added another lens for understanding engagement and thus, the students' cognitive motivation emerged as a major area of study. Eccles and Midgley (1989) contended that the 'fit' of students' developmental needs and the educational context is essential in motivating students and facilitating cognitive engagement. A more recent approach to motivational study (Anderman & Anderman, 1999; Roeser, Midgley & Urdan, 1996; Turner & Meyer, 1999, 2000; Turner & Patrick, 2009) was to examine the relationship between academic achievement and educational contexts. Turner (2001) argued, "The present challenge to motivational research is to integrate the notion of self and context. The 'situative' approach attempts to understand persons-in-situations and provides an alternative to both behavioural and cognitive approaches to motivation" (p. 85). Therefore, examining learning motivation through a situative lens could substantiate the belief that cognitive and behavioural engagement is an interactive experience in which both contexts and students play a role. Missing in the literature is insight about how student differences/developmental needs might interact with specific school contextual conditions in the development of student engagement (Nolen & Ward, 2008; Perry, Turner & Meyer, 2006).

Student Engagement Correlates

Researchers identified a number of positive proximal outcomes, which correlated with student engagement such as lower levels of suicidal ideation, anxiety, as well as the reduction of high-risk behaviour, such as violent behaviour, drug and alcohol use, and early age sexual activity (Institute on Medicine, 2004; Goodenow, 1993a; Lee, Smith, Perry & Smylie, 1999; Resnick et al., 1997; Wilson, Gottfredson, & Najaka, 2001). As well, engaged students were more likely to demonstrate academic achievement (Finn, 1993; Finn & Rock, 1997; Furlong et al., 2003; Willms, 2003).

High Risk Behaviour. Student engagement is a significant protective factor in lowering participation in high-risk behaviour (Bryant, Schulenberg, O'Malley, Bachman & Johnston, 2003; McNeely, Nonemaker, & Blum, 2002). In a meta-analysis of experimental and quasi-experimental studies of school-based prevention, Najaka, Gottfredson, and Wilson (2001) posited that increases in school attachment and commitment co-existed with decreases in high-risk behaviour. Conversely, students who, when rejected by their peers, experience loneliness and social isolation, associate with more disaffected peers are likely to become disengaged from academic pursuits and ultimately leave school (Hymel, Comfort, Schonert-Reichl, & McDougall, 1996; Wentzel, 1999). Additionally, a meta-analysis authored by Newcomb, Bukowski, and Pattee (1993) suggested that rejected children are more likely to become aggressive.

Bonding to school is a psychological factor that significantly correlated (negative relationship) with a number of adolescent outcomes including violence and aggression (Hawkins, Catalano, Kosterman, Abbott, and Hill, 1999). Through this relationship with critical adolescent outcomes, belonging at school presented as a protective factor

influencing adolescent participation in high-risk behaviour like early sexual activity, drug, and alcohol use and smoking (McNeeley et al., 2002). Students who expressed a greater sense of belonging were also more secure, worked harder, coped more adaptively, showed more positive affect, performed better in school and could be considered more resilient (Connell & Wellborn, 1991; Ladd & Dinella, 2009; Lynch & Cicchetti, 1997; Ryan, Stiller, & Lynch, 1994; Skinner & Snyder, 1999). Alternatively, weak engagement increased the likelihood that youth associated with others who used drugs, and could, via that association, be influenced to use drugs (Botvin, Griffin, Diaz, Scheier, Williams & Eptein, 2000; Swaim, Bates, & Chavez, 1998).

When a student experiences recurrent negative social interaction with peers, parents, or teachers, that student may seek out another social group where he/she achieves social acceptance and develops a sense of belonging (Bronfenbrenner, 2005). Osborne (2002) found a relationship between cognitive disengagement and negative behaviours such as being unprepared for class, ditching classes, and multiple school absences. Additionally, students who reported lower engagement were more apt to report physical fighting, school transience and suspension, and police arrest. Likewise, Liska and Reed (1985) pointed to student disengagement as an antecedent to violent or aggressive behaviour, since students were less prone to violence or aggression in a microsystem where they had personal ties and connections.

Academic Achievement. A number of researchers reported a positive relationship between school belonging and academic achievement. Clearly, school engagement repeatedly predicted academic achievement. For instance, Finn (1993) and Finn and Rock (1997) established that psychological and behavioural engagement predicted academic

achievement, a finding that extended to populations of students at-risk. They grouped 1,803 minority students from low-income homes according to academic success and found significant differences between groups in levels of engagement. Though important in understanding the influence of student engagement, this body of literature does not provide insight into the underlying reasons for the differences in engagement. Similarly, in an investigation of middle-school students, Hagborg (1998) compared students' sense of belonging to motivation and achievement using a modified version of the Goodenow's (1993b) Psychological Sense of School Membership student survey (reduced from 18 to 11 questions). He found students with a high sense of belonging reported higher academic achievement, more homework time, and greater motivation than students who scored lower on belonging.

An examination of the relationship between student perceptions of school warmth and academic achievement supports a deeper understanding of behavioural engagement; specifically participation. Voelkl (1995) measured teacher warmth using student perception ratings and standardized achievement tests to measure academic success. She included participation as a component for measurement, using the following four variables: attendance, preparation, behaviour, and academic engagement. Findings revealed that student perception of warmth connected to academic achievement. However, when the effect of participation was controlled, the relationship of warmth to academic achievement was no longer significant. Voelkl suggested that perceptions of warmth had more effect on participation, than a direct effect on academic achievement. More important than the effect on academic achievement and perhaps identified

unintentionally, was the identification of the significant relationship identification of a classroom contextual factor, teacher warmth, and student engagement.

In another study examining elements of the classroom context, Solomon, Battstich, Kim, and Watson (1997) found that when friendly, helpful teachers built relationships, allowed discussion about personal and societal issues, students reported a stronger sense of belonging. Such interactions help children develop a sense of belonging and engage in meaningful academic work (Pianta & Walsh, 1996). In a similar investigation by Berends (1992), student perception of teacher support predicted a feeling that school was worthwhile and that the educational process was important.

Summary of Literature Review

School attachment, school connectedness, school satisfaction, youth engagement, and student belonging are examples of connected and intersecting constructs often represented by the term student engagement. The inconsistency in the meaning of “student engagement” resulted in considerable variation in the manner in which it is measured (Jimerson, Campos, & Greif, 2003; Appleton, Christenson, & Furlong, 2008).

Investigation of negative school outcomes and student motivation provided the basis of early understanding of the student engagement construct. Early investigations explored behavioural engagement as a predictor of student achievement, but over time and with a deeper understanding of the construct, new models conceptualized student engagement as multidimensional (Appleton, Christenson, & Furlong, 2008; Furlong et al., 2003; Fredricks et al., 2004; Willms, 2003; Willms, Friesen, & Milton, 2009; Fiesen,

& Milton, 2009), considered valuable unto itself (Furlong et al., 2003; Furrer & Skinner, 2003; Willms, 2003).

Investigations identifying the match between appropriate educational contexts and students' developmental needs as necessary in the facilitation of cognitive engagement (Eccles & Midgley, 1989) prefaced investigations of the development of student motivation within educational contexts (Anderman & Anderman, 1999; Roeser, Midgley & Urdan, 1996; Turner & Meyer, 1999, 2000; Turner & Patrick, 2006). Turner (2001) posited that engagement results from interaction between contexts and students; suggesting that variation in student needs impacts the contextual conditions needed for student engagement. Missing in the literature is insight into how specific student differences/developmental needs might interact with school contextual conditions in the promotion of student engagement. Little is known about which aspects of the school context are most relevant for increasing engagement for different types of students (Fredricks et al., 2004; Nolan and Ward, 2008; Perry, Turner & Meyer, 2006).

Many engagement studies examined one or two types of engagement together but did not examine all three. The majority consider the impact of one type of engagement on one outcome. For example, the literature confirms that engaged students achieve higher levels of achievement than students who are not engaged. For the most part, research explored school antecedents of engagement in the same singular way but the influence of multiple antecedents had not been studied on the three dimensions of engagement simultaneously (Fredricks et al., 2004). Awareness about which contextual factors influence each type of student engagement remains outstanding.

Theoretical Framework

Using a bioecological theory of development, this study examined student engagement at school and how its components might be predicted by school contextual social factors (risk, protective and promotive). Through the combination of Bronfenbrenner's (1979) bioecological topology of human development and Furlong et al.'s (2003) school engagement framework, this study demonstrated how promotive, protective and risk factors might work together in an additive or interactive manner to influence three components of student engagement. While student engagement is a protective factor (Finn, 1993; Finn & Rock, 1997, Furlong et al., 2003; Wolf, Jaffe, & Crooks, 2006) resulting in positive proximal outcomes for students (achievement, reduction in high-risk behaviour), a number of contextual protective and risk factors positively and negatively predicted components of student engagement. Researching factors that predict student engagement, and ultimately long term proximal student outcomes, proved a promising avenue to inform school improvement efforts.

A Bioecological Perspective of Risk and Protective Factors

Bronfenbrenner's (2005) bioecological theory of human development offered a topology of developmental contexts while describing the processes through which these contexts affect development. Nested contexts affect the child through what Bronfenbrenner calls proximal processes. An example of one is that of the relationships a child experiences with significant adults in his/her life.

Bronfenbrenner's theory (1979), often represented by a Venn diagram (see Figure 1), presented an ecological system (retitled 'bioecological', Bronfenbrenner, 2005)

encompassing four concentric subsystems. Encircling the person, in order of proximity, is the “microsystem”, the “exosystem”, and the “macrosystem” (see Figure 1). At the centre of this ecological system, children are active participants in developmental relationships and settings throughout the course of their social development.

A “microsystem” is an environment where a child spends considerable time. Examples of “microsystem” contexts are the student's family, peers, classroom, and neighbourhood. Within these “microsystems” the individual has direct interactions with parents, teachers, and friends. For Bronfenbrenner (1979), the student is not passive in these situations but is reciprocally interactive and a participant in constructing the settings. Exchanges or overlaps among “microsystems”, for example when parents and teachers collaborate, occur via the “mesosystem”.

Encircling the “microsystems” is the “exosystem” or external environments that indirectly influence development and consists of community groups such as education, medicine, and employment. Overall, affecting all inner systems is the “macrosystem”, which consists of cultural principles, socio-economic conditions, political viewpoints, and social patterns. Bronfenbrenner later added a fifth system, termed the “chronosystem” which refers to the development of external systems over time. Cumulatively, Bronfenbrenner's systems are the context of human social development.

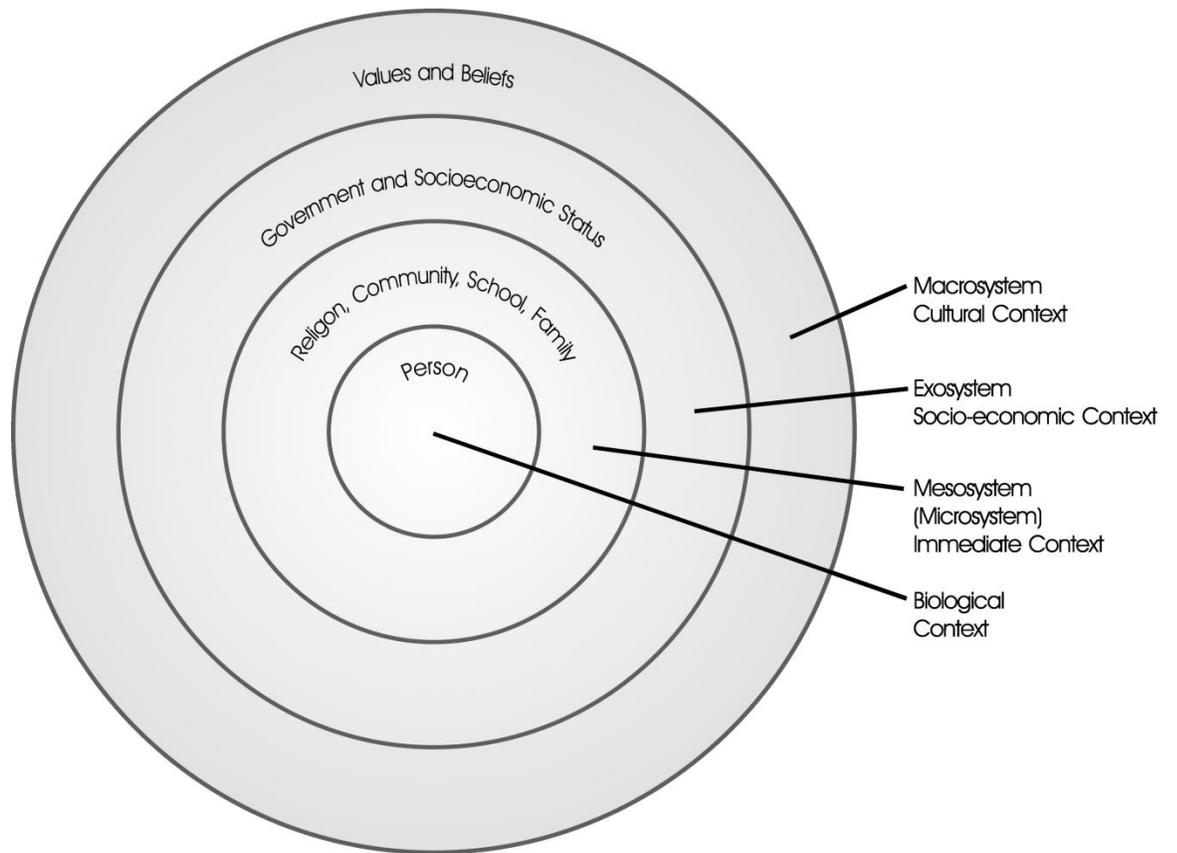


Figure 1. Bronfenbrenner's Bioecological Theory (1979)

The School “Microsystem”

At the core of Bronfenbrenner and Morris’s theory (1998) is all children's emotional, physical, intellectual, and social need for ongoing interaction with caring adults. They emphasized the consequence of these bi-directional interactions.

Considering the quantity of time children spend in school, it presents a unique opportunity for the growth of the adult-student relationships that are critical to positive development, considering the quantity of time children spend in school. The school microsystem could provide the first positive relationship a child develops with an adult, facilitating both emotional and cognitive development in a young person.

Bronfenbrenner and Morris (1998) described the proximal processes needed to foster the development of human competence and character. Children require participation in progressively more complex reciprocal activity, where the establishment of patterns of interpersonal interaction develop under a condition of strong mutual attachment—an attachment, which is dependent on the availability and commitment of an adult other than the primary caregiver. The process requires mutual accommodation and mutual trust between the school and the parents. Finally, effective processes require “public policies and practices that provide place, time, stability, status, recognition, belief systems, customs, and actions in support of child-rearing activities” (p. 37).

The variability and unreliability of present-day family life has a severely negative influence on a child’s development (Bronfenbrenner & Evans, 2000). When children do not experience the positive developmental effects of ongoing reciprocal activity with significant adults, authors suggested that negative effects could impinge on the school microsystem. When the nuclear family does not provide the developmentally needed supportive relationships, the child could look to develop them elsewhere, at times in inopportune places. Examples of resultant social skill deficits exhibited in schools are disruptive and violent behaviour, weak academic focus, and a lack of direction.

Proximal processes, such as bi-directional interpersonal relationships, may either add to or subtract from the developmental quality of an environment (Bronfenbrenner, 2005). Processes that add quality-protective factor –can react with processes that degrade the developmental quality of an environment–risk factors–resulting in the mediation or buffering of that risk factor (Fraser, Kirby, & Smokowski, 2004; Luthar, Cicchetti, & Becker, 2000; Rutter, 1985). Fraser et al. (2004) stated,

A compensatory effect is when the presence of a factor has a direct—or additive—effect by promoting positive outcomes regardless of risk exposure. By contrast, an interactive effect is when a factor has an impact only in the presence of a specific risk, immunizing against that risk. (p. 389)

As well, Jenson and Fraser (2005) postulated that the presence of protective factors could interrupt a negative developmental pathway accelerated by risk factors, which could, without the benefit of protection, lead to negative outcomes such as school failure, negative peer group selection, and participation in high-risk behaviour.

A promotive factor, (a recent term perhaps coined to highlight the significance of the most salient protective factors) can have a direct impact on the developmental quality of a context while not necessarily limited by risk factors (Sameroff & Gutman, 2004). Authors believed that promotive factors directly influence proximal outcomes.

Individual characteristics that serve as protective factors include a pleasant temperament, intelligence, self-esteem, and self-efficacy. Microsystem characteristics which act as protective factors include good parenting, interactions with caring and supportive adults and ecological opportunities (Benard, 2004; Masten, 1994; Werner & Smith, 1992).

According to this understanding of risk, protective, and promotive factors, then, children exposed to recurring risk factors can exhibit resilience (Richman, Bowen, & Woolley, 2004; Fraser et al., 2004). Resilience is the capability to prevail over stress when confronting adversity, a definition used to explicate better than anticipated outcomes from infants who prevailed against poor probability (Werner & Smith, 1992)

adults who adapted under considerable stress (Garbarino, Dubrow, Kostelny & Pardo, 1992), and people who recuperated from major trauma (Wolin & Wolin, 1993). The underlying theme of resilience is that, given significant adversity, individuals can do well –much better than their experience would seem to predict.

At the heart of resilience lie protective and promotive factors, which play a role in positive outcomes even when an individual experiences exposure to risk. Schools are frequently heralded as potential microsystems to build resiliency (Durlack, 1995; Minnard, 2002) and given that evidence demonstrated that poor school quality can expose students to risk (Durlak, 1998), it is reasonable for school community members to plan for the strengthening of protective factors and the reduction of risk factors within the school microsystem context.

There is evidence that the school microsystem makes a difference in student outcomes by providing an opportunity for the strengthening and increase of protective and promotive factors while reducing the occurrence of risk. Students' reports of school connectedness were associated with lower levels of suicidal ideation, violent behaviour, emotional anxiety, the use of drugs and alcohol, and the age of first sexual activity (Resnick et al., 1997). Elementary school intervention programs reduced violence, high alcohol consumption, and sexual activity in adolescents (Hawkins, Catalano, Kosterman, Abbott & Hill, 1999) and students engaged in extracurricular activities dropped out of school less frequently (Mahoney, 2000). The two most prominent predictors of resilience throughout childhood and adolescence are a positive prosocial relationship with at least one caring adult and having strong intellectual capacity (Masten & Coatsworth, 1998;

Rutter, 1990). Though the school cannot have an effect on intellectual capacity, it can provide contextual conditions conducive to positive relationships.

Furlong et al. (2003) provided a framework for examining the school as a developmental context for children, “The school engagement framework ...encompasses contexts, processes, and linkages to both the prevention of negative development outcomes and the promotion of positive youth development” (p.109) (Figure 2).

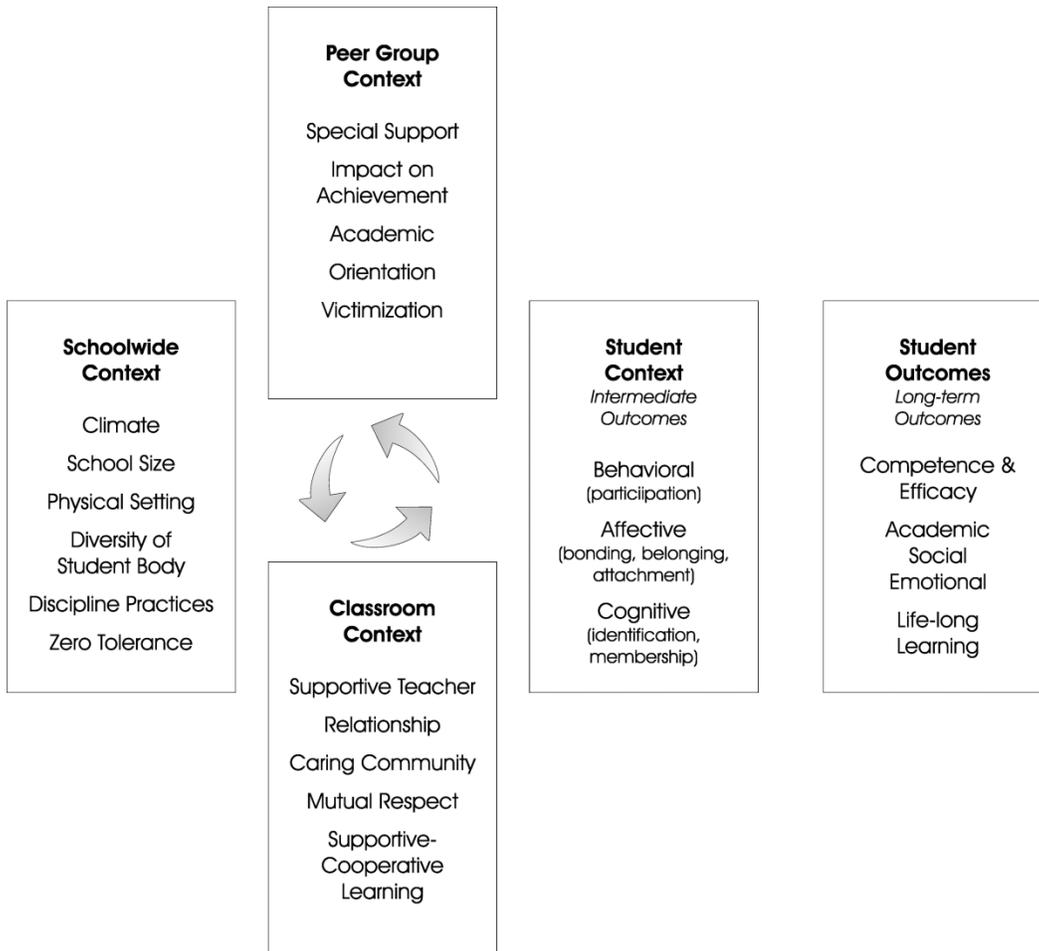


Figure 2. School engagement contexts and their relationships to student proximal outcomes (Furlong et al., 2003, p.109)

This study simultaneously examined the association between three of Furlong et al.'s (2003) contexts—the peer, the classroom and the school-wide—and to what Furlong et al.'s framework refers to as the student context of school engagement. They posited,

The importance of the school as a source in developing positive social skills and interpersonal attachments is recognized in the risk and resilience literature. Researchers have demonstrated that positive interpersonal attachments involving teachers and peers have a protective influence because they are associated with reduced risk of long-term negative outcomes such as substance abuse, depression, and anti-delinquent behaviour. (p. 102)

Contexts of School Engagement

Furlong et al.'s (2003) conceptualization acknowledged multiple contexts within the school microsystem that play a role in the intermediate proximal development of school engagement; additionally authors identified long-term proximal outcomes of education. Specific to this engagement framework, competence and efficacy within the academic, social, and emotional realms along with life-long learning are the primary goals of youth development which are not limited to the school setting but encompass “the development of psychosocial engagement across many life settings and throughout the life span” (p. 102). This model identified four school contexts that authors described as the “stages” on which the development of school engagement transpires. In addition, authors posited an interactive effect between the engagement contexts: student, peer group, classroom, and school wide.

Peer Context. Within the microsystem of the school, Furlong et al. (2003) described the peer context as influential to student engagement in three peer dimensions –

socio-emotional, academic, and motivation—to succeed within peer groups or social networks. Socio-emotional factors of influence cited by authors were the quality of peer relationships and prosocial skills. Peer acceptance positively affected interest in school (Wentzel, 1991; Wentzel, Barry, & Caldwell, 2004) while student distress negatively predicted interest. The perception of peer social support may ease distress, positively affecting school interest and engagement (Wentzel, 1998). Peer acceptance was associated with academic prosocial goal setting and social competence (Wentzel, 1994) while peer academic valuing predicted motivation (Goodenow & Grady, 1993). Wentzel and Caldwell (1997) identified friendships or peer group membership as a positive predictor of academic grades. Finally, in addition to positively influencing school achievement, Pelligrini and Bartini (2000) found that incidence of bullying inversely correlated with established social networks.

Classroom Context. The development of a classroom community, where positive relationships between and among teachers facilitated a cooperative learning environment facilitated the development of student engagement (Furlong et al., 2003). Phelan et al. (1992) recommended that students needed more than classroom instruction from their teachers. Students desired a sense of belonging and community.

Cothran and Ennis (1997) posited students' sense of membership was influential in the decision to engage in school. When a student felt a special connection to the school, engagement was more likely. Feelings of attachment resulted in a regard for others' opinions and in efforts to fulfil community behavioural expectations. Additionally, students needed more than physical space in a classroom, they needed a

social bond among and between students, and adults in the school community who supported student motivation (Goodenow, 1991).

Many researchers emphasised the import of supportive relationships with teachers (Bernard, 2004; Luthar et al., 2000; Wang, Haertel, & Walberg, 1998). Wentzel (1999) showed that supportive adult relationships provided a foundation for the development of favourable behavioural and social patterns, which effected additional aspects of child development like cognitive growth and school performance. She maintained that supportive adults were assets within all-important microsystems inhabited by a child. As well, Marks (2000) studied factors influencing psychological and behavioural engagement and found that relationships with adults positively influenced student engagement. Specifically, students who reported a connection with teachers and displayed higher school engagement were less likely to engage in high-risk behaviours (McNeeley et al., 2002).

In an investigation involving middle years' students, Goodenow (1993a) studied the link between a student's sense of belonging and the classroom context. Survey questions explored students' feelings about school. Results indicated that one distinct aspect of the classroom context, teacher support, explained more than one-third of students' appraisal of the interest, import, and value of their classroom effort, suggesting that young adolescents derived significant academic motivation from their perception of teacher supportiveness.

A growing number of studies revealed the relationship between teacher-student interpersonal relationships and school outcomes (Finn, 1993; Marks, 2000; Skinner, Wellborn, & Connell, 1990). Greater involvement and greater effort on schoolwork

transpired when students perceived encouragement and high levels of support from teachers and parents. Likewise, Voelkl and Frone (2000) determined that when students perceived that teachers believed them to be competent they were more academically successful. In a predictive study by DeWit, (2002), perception of teacher support predicted engagement, student achievement expectancies, and performance.

School-wide Context. Furlong et al. (2003) identified school climate as the school wide element essential in the development of student engagement; encompassing the physical and the regulatory environment, it resulted from conditions such as the size, student demographics, and school discipline policies. Correspondingly, Voelkl (1995) proposed that students related to the characteristics of the school microsystem such as its behavioural and academic expectations, standards, and philosophy.

In a longitudinal predictive study of student engagement, Skinner and Belmont (1993) identified two significant predictors: (a) structure significantly predicted behavioural engagement, and (b) teacher involvement predicted emotional engagement. Correspondingly, Klem and Connell (2003) established that fair structured classrooms with high expectations for all facilitated higher levels of student engagement.

Student Context. For this investigation, Fredricks et al.'s (2004) conceptualization of student engagement replaced that of Furlong et al.'s (2003) in representing the 'student context' component of the framework. Fredricks et al. (2004) presented a meta-analysis of the literature that highlighted three foremost components of engagement: cognitive, behavioural, and emotional. Behavioural engagement included student participation such as completion of homework, following the rules and extracurricular activity. Emotional engagement included feelings towards teachers, peers,

academic work, and the school at large. Lastly, cognitive engagement aligned with cognitive ‘investment’: the commitment and reflection required to master academic skills, and to understand complex concepts.

Measurement of Microsystem Context Risk and Protective Factors

Interventions for children and youth appear to be more effective, reduce negative outcomes, and increase positive outcomes when goals included the reduction of negative behaviours and the development of competence and achievement (Cicchetti, Rappaport, Sandler, & Weissberg, 2000; Masten & Powell, 2003). An intermediate outcome that promoted the development of such competence and achievement was student engagement in school (Blum et al., 2002; Furlong et al., 2003; McCreary Center Society, 2003; Masten & Powell, 2003). Student engagement in school, however, is not a unitary construct. It is not a constant exhibited in all subject areas and in all contexts over time (Marks, 2000). It is multidimensional, encompassing behavioural, cognitive, and emotional factors (Fredricks et al., 2004), influenced through the interaction of personal temperament, previous life experience and microsystem interpersonal relationships (Bronfenbrenner & Morris, 1998). As of yet, the literature does not inform practitioners of the contextual conditions most predictive of the development of three dimensions of school engagement for students at different developmental stages.

When examining school contexts for conditions that could influence the development of student engagement, the occurrence of both risk and protective factors warrant exploration. Masten and Powell (2003) posited, “...tools for assessing status and evaluating change need to include these elements (protective measures) of behaviour,

context, and process, along with more traditional measures of risk factors, symptoms, problems, and risky or pathological processes” (p.19). As suggested by Masten & Powell (2003), examination of each of the school microsystem contexts included scales for both risk and protective factors. In this study, information was gathered about the Peer, Classroom and School-wide Context though consideration of risk and protective factors suggested in the resiliency literature as import in supporting youth development.

Among the most widely cited protective factors for youth are optimization of academic and social competence, caring and supportive adult-child and peer relationships, safe supportive schools with high expectations for achievement and opportunities for meaningful participation (Leffert, Benson, & Roehlkepartain, 1997; Masten & Powell, 2003; McCreary Centre Society, 2003; Minnard, 2002; Wolfe, Jaffe & Crooks, 2006). In this study, two risk factors (peer victimization, social incompetency), and one protective factor (peer relationships) were those measured within the Peer Context using the following three scales: Peer Victimization; Dating Aggression; and Student Personal Support (see Table 1). Factors measured within the Classroom Context were: Strong Adult-Youth Relationships; Peer Relationships (protective factors); and School Disengagement (risk factor). The scales used to measure students’ perceptions of the Classroom Context were: Teacher Academic Support; Classroom Cohesion; and Alienation (See Table 2). The School-wide Context was examined for student’s perceptions of safety, student voice and peer social climate. Scales utilized to garner student’s perceptions of school-wide context factors were: School Safety; Student Voice; and School Social Climate (see table 3).

The researcher acknowledges that the names of two measures, School Social Climate and Classroom Cohesion, could cause misconceptions in the understanding of this study's results. The School Social Climate scale measures student's perceptions of the amount of high-risk behaviour participated in by the student body—specifically, smoking cigarettes, drinking beer, wine or liquor, smoking marijuana, using cocaine or hard drugs, sniffing glue, paint or other inhalants, having sexual intercourse, and having experienced oral sex. To avoid misunderstanding in the interpretation of this document, it was renamed for the remainder of this investigation as the Students' Perception of Peer Social Climate (SPPSC) scale. The Classroom Cohesion scale used in this study measured the students' perception of the classroom environment in terms of knowing the students, finding them friendly and liking to work with them. Consequently, for the rest of this document, it was referred to as the Students' Perception of Classroom Cohesion (SPCC) scale.

Tables 1, 2, and 3 convey the risk and protective factors, and the scales used in the study to examine each factor, and the source of those factors.

Table 1

Peer Context Factors and the Associated Construct Scales

Factor	Name of Scale Used	Source and Support of Factor
1. Peer Victimization (Risk)	1. Relational Victimization	1. Masten & Powell, (2003); McCreary Centre Society, (2003)
2. Social Incompetency (Risk)	2. Dating Aggression	2. Masten & Powell, (2003); Leffert, Benson, & Roejlkepartain, (1997)
3. Peer Relationships (Protective)	3. Peer Personal Support	3. Masten & Powell, (2003); Leffert, Benson, & Roejlkepartain, (1997); McCreary Centre Society, (2003)

Table 2

Classroom Context Factors and the Associated Construct Scales

Factor	Name of Scale Used	Source and Support of Factor
1. Strong Adult–Youth Relationships (Protective)	1. Teacher Academic Support	1. McCreary Centre Society, (2003)
2. Peer Relationships (Protective)	2. Students' Perception of Classroom Cohesion	2. McCreary Centre Society, (2003); Leffert, Benson, & Roelkepartain, (1997)
3. School Disengagement (Risk)	3. Alienation	3. Gottfredson, (1986)

Table 3

School-wide Context Factors and the Associated Construct Scales

Factor	Name of Scale Used	Source and Support of Factor
1. School Safety (Protective)	1. School Safety	1. McCreary Centre Society, (2003); Masten & Powell, (2003)
2. Meaningful Participation (Protective)	2. Student Voice	2. Blum, McNeely & Rinehart, (2002)
3. Adolescent Risk Behaviour (Risk)	3. Students' Perception of Peer Social Climate	3. Wolfe, Jaffe & Crooks, (2006); McCreary Centre Society (2003)

An Integrated Conceptual Framework

The integrated framework in Figure 3 supports the dynamic developmental process for adolescents suggested by Werner and Smith (1992), which moved beyond the theory of resilience as a trait or as an individual capacity. The integrated framework, used in this study, illuminated each context's opportunity for student influence in terms of risk, protective and promotive factors which, dynamically, effect the development of student engagement in the school microsystem. The resultant integrated conceptual framework provided the contextual structure of the school microsystem along with a manner to gauge the human relationships within them.

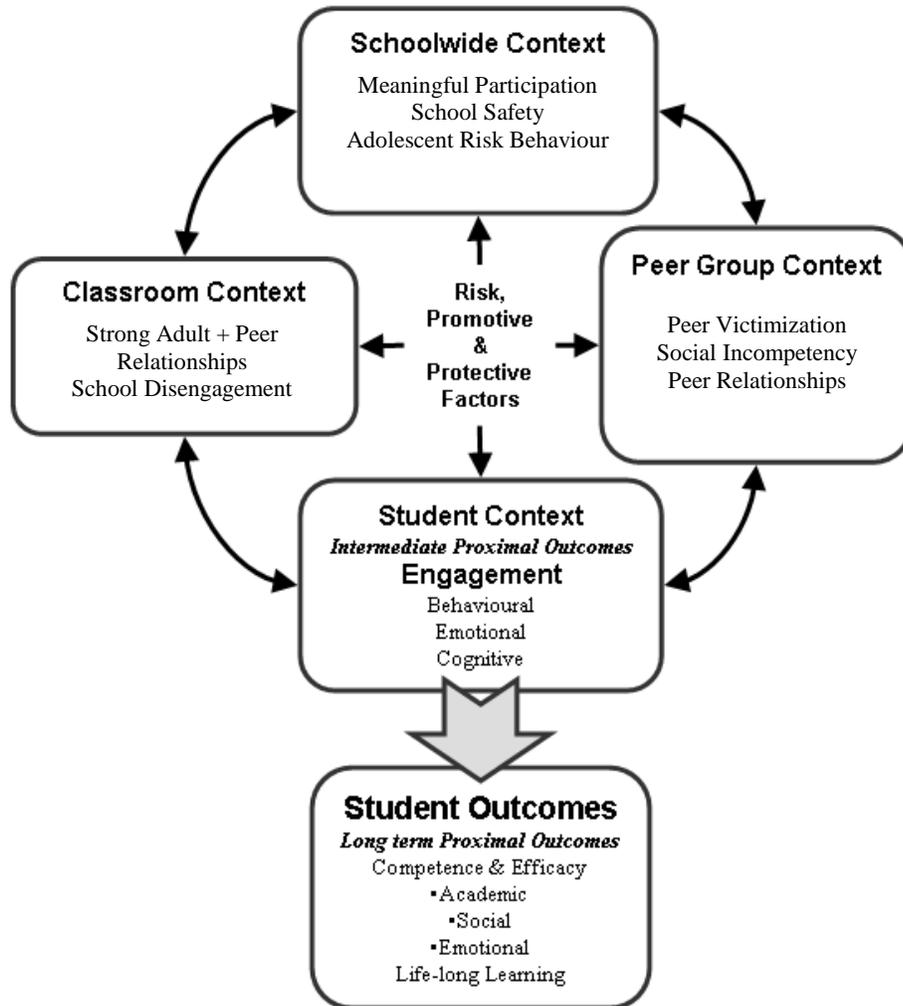


Figure 3. *An Integrated Conceptual Framework: Bronfenbrenner (1979) and Furlong et al. (2003)*

Summary

This chapter began with a review of the literature including research related to student engagement and concluding with a section outlining the strengths and weaknesses of previous studies. As well, it provides the conceptual framework used to guide this investigation, which incorporated Furlong et al.'s (2003) conceptualization of student engagement. This framework is embedded in Bronfenbrenner's (1979) bioecological perspective of human development, illuminating the notions of student risk and protective factors in school contexts as influential in adolescent development. The following sections comprise Chapter Two: (a) Student Engagement; (b) Student Engagement Correlates; (c) Student Engagement as a Multidimensional Construct; (d) A Summary of the Research; (e) Theoretical Framework; (f) A Bioecological Perspective of Risk and Protective Factors; and (g) An Integrated Conceptual Framework.

CHAPTER THREE

RESEARCH METHODOLOGY

The focus of this study was to identify contextual antecedent protective factors, which are predictive of three components of student engagement. There was an objective to identify antecedent risk factors located within the school microsystem that could negatively impact the development of engagement. The contexts examined were within the school microsystem, specifically the school-wide context, the classroom context, and the peer group context. This chapter begins with the classification of the study's methodology, outlines the procedures used to collect data, describes the participants and their selection, and delineates the instruments used within the online survey. Finally, a data analysis matrix of predictor and criterion variables used in this nonexperimental quantitative investigation ends the chapter.

The research design for this exploration of school contextual predictors of student engagement emerged from a philosophical perspective of realistic positivism. In Burrell and Morgan's framework (1979), realism "postulates that the social world external to the individual cognition is a real world made up of hard, tangible and relatively immutable structures" (p. 4) and positivism "seeks to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements." (p. 4). Additionally, the study followed a nomothetic approach utilizing systematic practice and procedure.

This study of student engagement fit into the category of nonexperimental quantitative research based on Johnson's (2001) framework, which categorizes studies through a series of questions intended to determine the primary objective. "Did the

researchers conduct the research so that they could predict or forecast some event or phenomenon in the future (without regard for cause and effect)?” (p. 9). A ‘yes’ response to Johnson’s query resulted in the classification of this investigation as a predictive nonexperimental design. Further, with the dimension of time added to the equation, the designation expanded to a longitudinal, nonexperimental predictive study. Finally, the longitudinal component of this study is ‘prospective’ as the same participants completed surveys at consecutive instants over time.

Rationale for Study Design

Kerlinger (1986) proposed that nonexperimental research in the social sciences is more important than experimental as “...most social scientific and educational research problems do not lend themselves to experimentation, although many of them do lend themselves to controlled inquiry of the nonexperimental kind.” (p.359). Johnson (2001) stressed this viewpoint as well, “Although the strongest designs for studying cause and effect are the various randomized experiments, the fact remains that educational researchers are often faced with the situation in which neither a randomized experiment nor a quasiexperiment is feasible” (p.1). As this study examined the relationships of school contextual conditions outside the control of the researcher, a nonexperimental design guided the exploration. Instrumental in the decision regarding the design of the study was the fact that school division leaders participating in this study showed interest in looking at the possible causal relationships between school contextual conditions and student engagement; however, they opted not to participate in a random control designed study.

This examination identified context variables which statistically predicted student engagement. Such predictive studies interested in suggesting causality need to satisfy three conditions: the variables must be related, the proper time order must be adhered to (a longitudinal data collection where the independent variable precedes the dependent variable) and the observed relationship must not have an alternative explanation or “nonspuriousness condition” (Johnson, 2001, p. 7). Johnson also encouraged the employment of prospective studies (the same individuals are studied over time) especially when researchers are interested in suggesting causality and satisfying the time order condition.

Sample

The sample is taken from a larger study of Canadian student behaviour, an evaluation of the positive youth development program, *The Fourth R*, a violence prevention and risk-reduction program developed by Wolfe, Jaffe, Crooks, and Hughes (2001). The Saskatchewan data for this investigation was gathered through an online self-report questionnaire administered to 189 students in grade nine during the 2005-2006 school year in three high schools and from 140 students in the 2006-2007 school year in three additional high schools (see Table 6). All students with parental permission and in attendance on the days of testing completed the online survey. Completed on-line questionnaires represented participation from 96% of the grade nine population in participating schools. Six school administrators volunteered their schools for inclusion in the research component of Saskatchewan’s Implementation Project of *The Fourth R*—a violence prevention program intended for grade nine students. Data from that evaluation were used in this investigation.

Procedure

Data were collected from each student by means of an on-line survey at the beginning of grade nine (September 2005, September 2006) and again eight months later (May 2006, May 2007). Administration time for the on-line survey was approximately one hour. Participants answered questions about healthy and unhealthy choices they may be making about relationships, their use of drugs and/or alcohol, and their sexual behaviour. Additionally, they answered questions about their attitudes and beliefs about school life and their relationships with their parents. Finally, the survey included questions about feelings of distress and stressful life events that they might have experienced.

Instrumentation

The *Saskatchewan Fourth R Questionnaire* contained numerous scales, of which the following were of interest in this study: Teacher Academic Support, Relational Victimization, Participation in Extracurricular Events, Feelings of School Safety, Student Voice, Dating Aggression, Alienation, Students' Perception of Classroom Cohesion, Academic Success, Goals, Valuing School, Belonging, Peer Personal Support, School Attendance, Violent Risk Behaviours, Suspension and Students' Perception of Peer Students' Perception of Peer Social Climate. Table 4 (p. 58) provides an overview of the scales, grouped by contexts, their sources, and the authors' reported reliabilities.

Measurement of Predictor Variables

Scales used to measure predictor variables in the study were: (a) Students' Perception of Peer Students' Perception of Peer Social Climate – Seven items measured student perception of student high-risk Students' Perception of Peer Social Climate,

student perceptions regarding what percentage of students in the school participate in smoking, drinking alcohol, drug use, and sexual activity—high risk activity. Five questions came from *Life Skills Questionnaire* and two questions are from *The Fourth R Research Team* at the Centre for Addiction and Mental Health's Centre for Prevention Science at the University of Western Ontario, D. Chiodo, (personal communication, October 17, 2005); (b) Peer Relational Victimization – This five-item scale assesses student perception of peer relational victimization over the three months before the data collection. The source of the scale is *The Fourth R Research Team* at the Centre for Addiction and Mental Health's Centre for Prevention Science at the University of Western Ontario (2005); (c) Safety - This question asked about school safety and came from the *Youth Risk Behaviour Surveillance System's State and Local Standard High School Questionnaire (YRBSS)*. It asks students the frequency of any unsafe feelings they have in school; (d) Dating Aggression – This scale measures experiences of violence perpetration and victimization in a dating relationship during the previous three months. All items come from the *BC Healthy Youth Survey*; and (e) Student Voice - This question asks about school voice and came from the YRBSS. It asks if students have a voice in school governance. Table 4 provides previously reported reliabilities for the above listed scales (see Appendix A & C for individual scale items).

The final four predictor variable scales are part of the *Classroom Life Instrument* developed by Johnson and Johnson (1996) that authors purport to gather information about student interaction and perception of the classroom environment: (f) Students' Perception of Classroom Cohesion – this scale assesses a student's belief that a classroom has a positive working environment. It has four items and asks whether students know

each other, are friendly, and like to work together; (g) Teacher Academic Support – the original scale from Johnson and Johnson (1996) consisted of four items. L. Sippola (personal communication, July 12, 2006) adapted the scale and added three items. It indicates a student's perception that the teacher cares that he/she learns and that the teacher is approachable and available to support that learning; (h) Alienation – This scale identifies the degree to which a student feels estranged from peers, the teacher, and classroom learning activities. (Adapted by Sippola, 2003; Johnson and Johnson, 1996); and (i) Peer Personal Support – This scale measures a student's belief that others in the class are his/her friends and accepts him/her as a person (Johnson and Johnson, 1996) (See Appendix B for individual items).

Measurement of Dependent Variables

Scales used to identify this study's dependant variables came from the *Tell Them from Me Survey* developed by D. Willms (personal communication, June 24, 2005), specifically: (a) Belonging; (b) Valuing School; (c) Aspirations; and (d) Participation. The author granted permission for use of the scales in this investigation of student engagement.

Recombination of items from Valuing School and Aspirations resulted in three scales: Valuing School, Goals and Investment. The new scales aligned with the two components of engagements described by Fredricks et al. (2004).

The participation scale asked questions about the amount of time spent doing a number of activities (e.g. watching TV, playing video games), questions about unexcused absences and about participation in extracurricular activities. As this investigation was interested was in school context factors, recombination and some elimination of items

from the original participation scale resulted in two separate scales. One measured attendance, the other measured participation in school extracurricular activity.

Scales of Emotional Engagement

Two scales assessed Emotional Engagement—Belonging and Valuing School : (a) the Belonging scale asked about each student’s feelings of inclusion at school; whether a student thought he/she had friends and felt accepted by peers; and (b) the Valuing School scale indicated whether a student appreciated the subject content and believed it was beneficial for his/her future.

Scales of Cognitive Engagement

The two scales that assessed Cognitive Engagement were (a) questions about Investment at school asked about valuing subject specific learning as well as whether he/she thought that the learning in his/her classes was important and whether they liked schoolwork that was challenging, and (b) the questions used to quantify Goals asked their perspective on finishing high school, post secondary education, and financial and career success.

Scales of Behavioural Engagement

The two scales that assessed levels of Behavioural Engagement were (a) the Attendance scale measured the number of unexcused absences and late arrivals and, (b) the Participation scale calculated amount of school extracurricular activity through questions about participation in school sports, clubs and activities.

Scales of At-Risk Subgroupings

Identification of students for inclusion into at-risk subgroups, where additional regressions analyses identified contextual conditions most accountable for the

development of the three components of student engagement were: (a) the Academic Success question was from the NLSCY, and asked students to describe his/her grades over the past year; (b) the dichotomous Suspension question (yes/no) from the NLSCY, asked students to report any occurrence of suspension during the past year; and (c) twenty questions measured violence-related behaviours and school-related violence-related-behaviours safety, the frequency and severity of physical fights, school-related fights, and abusive and bullying behaviour. The Violent Risk Behaviour scale came from the YRBSS: www.cdc.gov/nccdphp/dash/yrbs/index.htm. Table 4 provides previously reported reliabilities of all scales. Scales used to identified subgroupings of students at risk for lower levels of student engagement, low academic achievement, suspended students, and those exhibiting violent risk behaviours are listed in Table 4.

Table 4

Construct Scales, Source of Scales & Previous Reliabilities

	Scales	Number of Items	Source of Scale	Author's α
Contexts				
School-wide	School Safety	1	<i>Fourth R Survey</i>	
	Student Voice	1	<i>Fourth R Survey</i>	
	School Social Climate	7	<i>Fourth R Survey</i>	.80
Peer Group	Dating Aggression	5	<i>Fourth R Survey</i>	.75
	Student Personal Support	4	Johnson & Johnson	.85
	Relational Victimization	5	<i>Fourth R Survey</i>	.84
Classroom	Teacher Academic Support	7	Johnson & Johnson (adapted by Sippola,	.82
	SPCC	4	2003)	.51
	Alienation	7	Johnson & Johnson	.68
Student			Johnson & Johnson	
Emotional	Belonging	7	TTFM Survey	.83
	Valuing School	7	TTFM Survey	.84
Cognitive	Aspirations	7	TTFM Survey	.83
Behavioural	Participation	13	TTFM Survey	.78
At-Risk Sub-Groupings				
	Low Academic Success	1	Fourth R Survey	
	Violent Risk Behaviours	18	Fourth R Survey	.87
	Suspended	1	Fourth R Survey	

Predictor variables resided in four categories, (see Table 5) which represented: (a) Peer Context including Dating Aggression, Student Personal Support, and Relational Victimization; (b) Classroom Context, including Teacher Academic Support, Students' Perception of Classroom Cohesion, and Alienation; and (c) School Context, including School Safety, Student Voice, and Students' Perception of Peer Students' Perception of Peer Social Climate. The criterion variable was the students' perceived level of engagement; also represented by subcategories, which were: (a) Student Context - Cognitive Engagement, including Goals, and Investment; (b) Student Context - Emotional Engagement, including Belonging and Valuing School; and (c) Student Context - Behavioural Engagement, including Participation, and Attendance.

Data collection was conducted over a two year period. Three different schools participated in data collection each year and the process for data collection in year one was replicated in year two. All scales were included in the survey during both administrations—at the beginning of grade nine and again close to the end of the grade nine school year—as the *Saskatchewan Fourth R Questionnaire* was administered to measure any changes in behaviour, attitude, and knowledge of the students before and after the implementation of *The Fourth R Program*.

This study used selected scales at time one of data collection (beginning of grade nine) as predictor variables and used other selected scales at time two of data collection (near the end of grade nine) to measure criterion variables. Table 5 presents the scales that were used from each data collection as well as articulating which scales were used as criterion and predictor variables.

Table 5

Study Variables: Predictor Variables Measured at Time 1 & Criterion Variables Measured at Time 2

Engagement <i>Criterion Variables</i> CV – Time Two	Contexts <i>Predictor Variables</i> PV – Time One		
	School-wide Variables (3)	Peer Group Variables (3)	Classroom Variables (3)
1. Belongingness	School Safety	Dating Aggression	Teacher Academic Support
2. Valuing School			
3. Investment	Student Voice	Peer Emotional Support	SPCC
4. Goals			
5. Participation	SPPSC	Relational Victimization	Alienation
6. Attendance			

Table 6

Timeline and Scales for Data Collection

Year One of Data Collection 3 Schools – 189 students		Year Two of Data Collection 3 Schools – 140 students	
September 2005 – 2006 Time One	May 2005 – 2006 Time Two	September 2006 – 2007 Time One	May 2006 – 2007 Time Two
Full <i>Fourth R</i> <i>Questionnaire</i> Administered –			
Predictor Variables Used for Analysis	Criterion Variables used for Analysis	Predictor Variables Used for Analysis	Criterion Variables used for Analysis

Validity and Reliability

Scales included in the *Saskatchewan Fourth R Research Questionnaire* (which provides the data used in this study) came from three pre-existing, well-established survey tools. Modified scales from the *Tell Them From Me Survey* (TTFM) (Willms, 2003), gauge/quantify levels of the three dimensions of student engagement: (a) Cognitive, (b) Behavioural, and (c) Emotional. Johnson and Johnson (1996) developed those scales included for the quantification of the 'classroom context': (a) Student Personal Support; (b) Students' Perception of Classroom Cohesion; (c) Alienation; and (d) Teacher Academic Support (adapted by Sippola, 2003). The remaining construct scales and single question queries originated from *The Fourth R Survey*, created at the Centre for Addiction and Mental Health's Centre for Prevention Science, by Wolfe, Jaffe, Crooks, and Chiodo, (2005). Construct scales selected for analyses in this study are those believed to hold validity in the manner previously operationalised (by Johnson & Johnson, 1996; Willms, 2003; and Wolfe, Jaffe, Crooks & Chiodo, 2005). TTFM scales used in these analyses do not appear in the Appendix of this dissertation. Permission for publication was not granted by the author.

Validity results from a researcher's sound interpretation of study scores. As Trochim (1996) explains, "Construct validity is the approximate truth of the conclusion that your operationalization accurately reflects its construct" (p.7). Messick's (1995) comprehensive perspective of all assessments, including questionnaires, explains validity as a unitary notion validated through a variety of aspects or conditions. Therefore, for this examination, evidence of content validity included consideration of scales and item relevance to each microsystem context, where each scale was reflective of a context

within the school microsystem and therefore chosen to examine relational interactions within those school contexts. As well, predictive validity was relevant to the study's overall validity as construct scales were conceptualized as the means to predict student engagement.

A measure of construct validity that occurs simultaneously with that of scale reliability is internal consistency (Messick, 2000). Reliability evidence in the form of Cronbach's alpha (α), as reported by authors of originating sources is listed in Table 4. Internal consistency scores for scales utilized in the current study were calculated at the .05 level of significance.

Data Analysis

This investigation examined the relationship between student perception of their school contextual relationships with three components of student engagement, cognitive, emotional, and behavioural. Survey data was analysed using regression procedures in SPSS (version 16.0), to determine the relationship between predictor variables (PV) at time one of data collection and the criterion variables (CV) of student engagement at time two of data collection.

Research question one (see p.4) explored each predictor variable's ability to statistically predict a criterion variable (five scales of engagement). When answering this question, simple regression identified the unique variance explained by each of the risk and protective factors to predict the dimensions of engagement. In question two (see p.4) independent t-tests identified differences in the mean scores of male and female students

for each predictor variable. Examinations of differences in mean scores identified possible contextual differences that promoted engagement for male and female students.

Research questions #3 and #4 (see p.4) determined the predictability of engagement variables from a combination of contextual variables. Question #3 examined the total student sample and question #4 examined the subgroups of students at-risk for negative life trajectories (suspended students, academically unsuccessful students and those displaying violent risk behaviour). As questions three and four included the consideration of many predictor and/or many criterion variables resulting in a complex data set, multivariate analysis provided a viable option for analyses. As Tabachnick and Fidell (2001) suggested, stepwise regression determined regression models for each of the engagement components for each of the groups studied in question three and four. Then, hierarchical regressions computed models while controlling for risk factors to explore interaction/mediation effects.

Ethical Considerations

The *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (1998) (TCPS) outlined the researcher's ethical obligations to his/her subjects when conducting research in Canada with human participants. This policy statement guides the review and approval process conducted by all Canadian institutional ethics boards in cases where the institution receives Tri-Council funding. The policy statement identified the fundamental principle of contemporary research ethics as respect for human dignity, and protected the compound and interdependent welfare of the research

participant. It provided the philosophical foundation from which the researchers' ethical obligations emerge (Tri-Council, 1998).

The Behavioural Research Ethics Board Approval for *The Fourth R Evaluation* (of which this study's data collection is part) was received from the University of Saskatchewan on August 26, 2005 (See Appendix I). The principle of Respect for Free and Informed Consent (Tri-Council, 1998) guided the development of the process and the Participant Information Letter used to inform parents and students of the study (See Appendix E) as well as the Parent Consent and the Student Assent forms (See Appendix F). In addition, Boards of Education gave the researchers permission to conduct the research with their students (Appendix G) for the study. Students, as Vulnerable Persons (Tri-Council, 1998) require written parental permission for participation.

Concern for Student Privacy and Confidentiality (Tri-Council, 1998) directed the development of an online survey that did not draw on student names to link pre/post survey responses (Appendix E). All online data materials were identified by a unique numeric identification number. Surveys were subject to examination only by the researchers. When completing the on-line surveys, students were assigned a one-time only login and password to access the web-based survey. Students were also assigned a unique numeric identification number. This numeric identification number served to match surveys for the pre-and post-tests. No names were associated with any data, or used in any report. The master list of student names and identification numbers were maintained by the researchers and cannot be accessed by anyone else. This information is separate from all other data and will be destroyed once the need for it is passed.

The principles of Balancing Harms and Benefits and Minimizing Harm are vital to the ethics of human research. They require a positive harms-benefit correspondence where predictable harms do not offset probable benefits; subjects must not experience any unnecessary harm (Tri-Council, 1998). Information regarding the risks and benefits of this study, as well as measures taken to protect student participants are included in the Participation Letter (Appendix E), the Parent Consent Form and the Student Assent Form (Appendix F).

Students' participation in the study was voluntary. They were not required to answer any question or participate in any activity that made them feel uncomfortable. They could refuse to participate, refuse to answer any questions, or withdraw from the study at any time with no effect on academic status. They had access to counsellors on-site at their school and they could receive support from a counsellor by placing their name in a specified location in the school office, by informing a trusted teacher, or by contacting the school counsellor directly (Appendix H).

Dating and developing healthy relationships are topics that are interesting to many teens. Researchers felt that students enjoyed completing the survey as they asked questions about topics that are important to them. In addition, there are two potential benefits associated with an individual's participation in this project: (a) new knowledge and skills pertaining to healthy relationships, problem solving of interpersonal conflict situations, safe sexual practices, and substance use; and, (b) benefits through the knowledge gained about behavioural, cognitive, and emotional student engagement with their respective schools. There are no known benefits to the participants as a direct result of the research study.

Summary

Delineated in this chapter were the components of the research problem and the planned method of investigation. Two data collections periods, each with a pre/post component, took place over the 2005-06 and the 2006-07 school years as part of the larger *Saskatchewan Fourth R Program* evaluation. An online survey gathered data from grade nine students to examine peer, classroom, and school-wide microsystem contexts, as well cognitive, emotional, and behavioural student engagement. Simple, stepwise, and hierarchical regression analyses identified relationships between the components of student engagement and the targeted risk and protective factors in each of the school contexts. Methodologically, this study used a ‘prospective longitudinal nonexperimental predictive’ approach. The data findings are reported in the next chapter.

CHAPTER FOUR

RESULTS

Outlined in this chapter are the data analyses conducted for this quantitative investigation of the predictive strength of school contextual conditions on student engagement. Descriptions of preliminary analysis, data screening, and statistical data analyses precede study results. Research questions provided the framework for conveying study results; requisite analyses are described in conjunction with results specific to discrete questions. In summary, a collation of significant findings ends this chapter.

Preliminary Analysis

This study utilized data from *The Saskatchewan Fourth R Evaluation (2007)*, a study that surveyed grade nine students in six high schools. An online survey tool administered once in the fall and again in the spring of the same school year, to the same sample, collected data on student engagement and adolescent risk factors. Written parent consent and student assent resulted in a student participation rate of 96%.

Data Screening before Analysis

Regression analysis identified the school context conditions (time 1), which predicted student engagement (time 2), a strategy suggested by Tabachnick and Fidell (2001), “Many multivariate procedures [such as regression analysis] are based on assumptions: the fit between your data set and the assumptions is assessed before the procedure is applied” (p.56). Before analysis, data examination targeted the underlying assumptions required for the planned regression analysis. To prepare data for effective

analysis, the researcher conducted a number of screening procedures as recommended by Tabachnick and Fidell (2001). Assessment of data included inspection of file accuracy, correlation patterns, and missing data.

Accurate and Missing Data

Before the use of statistical analysis, data were checked for accuracy and missing data points. To preserve all cases for further analysis, the expectation-maximization method (EM) replaced randomly missing data (Tabachnick and Fidell, 2001).

Of the 658 surveys collected, 44 warranted elimination from the study resulting in 614 surveys included in the study sample. Eliminated cases included those with invalid student responses (e.g. all answers were the first choice, student answered in a pattern) and those without a pre or post survey pair. Preliminary analyses ensured that exclusion of surveys did not significantly change the distribution of variables or result in significant differences in the distribution of independent or dependent variables. The final sample for analysis consisted of 307 sets of pre/post student surveys.

Normality, Linearity, and Homoscedasticity

An underlying assumption of regression analysis is multivariate normality or that each variable has a reasonably normal distribution. To assess the distribution of each predictor variable and criterion variable both statistical and graphical methods assessed skewness and kurtosis. Results indicated that only one variable, Valuing School, was close to a normal distribution. Tabachnick and Fidell (2001, p.72) suggested transformation of variables to improve their normality; however, the variables, once

transformed, showed a reduction in predictive power and no improvement in multivariate normality¹. Therefore, the researcher opted not to transform study variables.

A straight-line relationship between variables is the assumption of linearity. In this study, statistics on skewness monitored such variable relationships as suggested by Tabachnick and Fidell (2001). The assumption of homoscedasticity connects to normality and refers to the sameness in score variability between two continuous variables. Levene's test of homogeneity of variance, known for its insensitivity to departures from normality, analysed score variability between variables during regression analyses.

Multicollinearity and Singularity

In a case of multicollinearity, variables are highly correlated (.9 and higher) while in a case of singularity one variable is a compilation of two or more variables (Tabachnick and Fidell, 2001). Problems with multicollinearity and singularity that caused statistical instability were monitored during regression analysis using SPSS.

Data Analyses

Different analyses conducted with the data included descriptive statistics, correlations, and regression. Descriptive statistics and frequencies provided a general understanding of the criterion (engagement) variables and predictor (context) variables. Subsequently, intercorrelations examined the direction and strength of the relationships between the variables.

¹Transformation of non-normal variables is recommended, however, as interpretation was lost with transformation, transformation had minimal effect in improving variable normality, and transformation did not result in an increase in multivariate normality (residual screening), raw variable data were not transformed.

When answering research questions number one, the examination of the relationship between this study's school contextual factors and student engagement, simple regression was employed. For question two, t-tests were used to measure differences in the variable means of male and female students. Theoretically, all predictor variables could have influenced the components of engagement. Given the lack of studies that explored school contextual relationships simultaneously with the three components of engagement, stepwise regression identified the most statistically significant regression models (Tabachnick and Fedell, 2001) in regression analyses conducted when answering question three. Ultimately, hierarchical regression controlled for the effect of risk factors in question four analyses. Steven's (1996) recommendation that "for social science research, about 15 subjects per predictor are needed for a reliable equation" (p. 72) guided regression analyses in this study.

Instrumentation

Descriptive Statistics & Reliability of Scales

One of the main concerns regarding scale reliability is internal consistency or how well items in a scale 'fit'. Are all items measuring the same construct? One of the most commonly accepted indicators of internal consistency is Cronbach's alpha coefficient. This coefficient should be at least .7 to demonstrate an acceptable level of scale reliability (DeVellis, 2003).

Since a scale's reliability is variable, depending on the sample application, the writer calculated reliabilities for each scale. For one scale, item elimination occurred to achieve a Cronbach's alpha greater than .7. Another benchmark used in this study to

assess the reliability of a scale was an inter-item correlation range of between .2 and .4, specifically when scales had less than 10 items (Briggs & Check, 1986).

Cronbach's alpha reliability coefficients served as an index of internal consistency for each scale. The sample size, number of items, mean score, standard deviation, range and reliability of each scale are in Table 7. Alpha reliability scores are adequate and range from .68 to .93. The following points articulate the scale adjustments or item retention consideration in this study.

Students' Perception of Classroom Cohesion. The item "My best friends are in this class" was removed resulting in an increase in Cronbach's alpha from .653 to .722.

Participation. This scale consisted of four items. A Cronbach's alpha of .582 resulted from the reliability analysis. In addition, the inter-item correlation range was outside the recommended .2 - .4 resulting in this scale's exclusion from further analyses.

Goals. A Cronbach's alpha of .683 resulted from the reliability analysis. Because this scale consists of four items, an inter-item correlation within the recommended .2 - .4 resulted in its inclusion in further analyses.

Table 7

Descriptive Statistics & Reliabilities for Scales

Scales	N	Items	Mean	SD	Range	rxx
Attendance	307	2	11.03	4.89	.41	.70
Goals	307	4	17.28	2.62	.77	.68
Investment	307	4	13.24	2.11	.28	.77
Belonging	307	5	19.10	4.06	.81	.84
Valuing School	307	5	18.80	4.49	.89	.84
Alienation	307	7	19.62	5.28	1.57	.70
SPCC	307	3	11.69	2.65	.52	.72
Teacher Support	307	7	22.47	5.11	.95	.87
Dating Aggression	307	5	19.47	3.96	.88	.85
Relational Victimization	307	5	7.85	2.39	.47	.78
Safety	307	1				
SPPSC	307	7	16.07	5.07	1.80	.88
Student Support	307	4	13.63	3.80	.33	.90
Violent Risk Behaviour	307	18	21.77	6.60	1.08	.93
Suspension	307	1				
Academic Success	307	1				

Table 8

Correlation Matrix between the Engagement Variables (CV)

	Attendance	Goals	Investment	Belonging	Value School
Attendance	1.00	.00	-.04	-.12**	.03
Goals		1.00	.67**	.34**	.48**
Investment			1.00	.34**	.58**
Belonging				1.00	.27**
Value School					1.00

* $p < .05$, ** $p < .01$

Attendance was significantly correlated ($p < .01$) with only one other criterion variable, Belonging ($r = -.12$). Goals showed a significant correlation ($p < .01$) with Investment ($r = .67$), Belonging ($r = .34$) and Valuing School ($r = .48$). Investment significantly correlated ($p < .01$) with Valuing School ($r = .58$). Valuing School showed a significant relationship to Belonging ($r = .27$); notably, both are elements of Emotional Engagement.

Table 9

Correlations between the Engagement Variables and Predictor Variables

Variables	Cognitive Engagement		Emotional Engagement		Behavioural Engagement
	Goals	Investment	Belonging	Valuing School	Attendance
1. Alienation	-.40**	-.34**	-.33**	-.25**	.08
2. SPCC	.35**	.20**	.60**	.15**	-.15**
4. Teacher Support	.29**	.40**	.38**	.40**	-.02
4. Relational Victimization	-.03	-.08	-.18**	-.03	.03
5. Social Relations	-.17**	-.21**	-.22**	-.10*	-.04
5. Student Support	.44**	.35**	.57**	.30**	-.08
7. Safety	-.27**	-.22**	-.40**	-.09	-.03
8. Social Climate	-.08	-.03	-.03	-.16**	-.02
9. Student Voice	.02	.01	.09	.02	.04

*p < .05, **p < .01

Correlations between the predictor variables and the criterion variables that accounted for more than 10% of the variance were: Goals with Alienation ($r^2 = .16$), Students' Perception of Classroom Cohesion ($r^2 = .12$), and Student Support ($r^2 = .19$); Investment with Alienation ($r^2 = .16$), Teacher Support ($r^2 = .16$), and Student Support ($r^2 = .12$) and; Belonging with Alienation ($r^2 = .11$), Students' Perception of Classroom Cohesion ($r^2 = .36$), Teacher Support ($r^2 = .15$), and Student Support ($r^2 = .32$).

Research Questions

Four questions guided the analyses of student impressions of school antecedent contextual conditions to predict the three components of student. Each of the questions follows with a description of the findings.

Research Question # 1

To what extent are students' perceptions of their school contexts predictive of levels of school engagement?

Simple regressions identified the degree to which each of the predictor variables (contextual scales) predicted criterion variables (engagement scales). Tables 10 to 14, one for each engagement variable (CV), provide the results of the regression. Statistically significant findings for each criterion variable follow individual tables.

Table 10

Simple Regression Results between Goals (Criterion Variable) and Predictor Variables

Cognitive Engagement - Goals (CV)

Predictor Variables (PV)	T value	<i>p</i>	R
1. Alienation	-6.63	.00	.13
2. SPCC	5.07	.00	.08
3. Teacher Support	4.60	.00	.07
4. Relational Victimization	.07	.95	.00
5. Dating Aggression	-2.10	.04	.01
6. Student Support	6.91	.00	.14
7. Safety	-3.85	.00	.05
8. SPPSC	-2.01	.05	.01
9. Student Voice	.55	.59	.00

Note. Findings at the $p < .05$ significance level are in boldface.

Students who scored high in this scale of engagement (Goals) were those students who had life goals that included continued learning. They planned to finish high school and go on to post-secondary education. In the long term, they see themselves as financially successful with a rewarding career.

Both risk and protective factors predicted Goals, a component of Cognitive Engagement. Specifically, Students' Perception of Classroom Cohesion, Teacher Support, Student Support are protective factors that significantly forecasted Goals. Risk factors that predicted Goals were Alienation, Dating Aggression, Safety, and Students' Perception of Peer Students' Perception of Peer Social Climate. Alienation, Student Support, and Teacher Support, the stronger of the predictors, asked questions related to classroom life. Overall, a positive classroom context where students sensed that their teacher supported their learning and where other students were caring and worked together appeared to be conducive to the development of Goals, a component of cognitive engagement.

Finding 1.1. The following predictor variables predicted Goals, a component of cognitive engagement, at a significant level ($p < .05$) are Alienation ($R = .13$), Students' Perception of Classroom Cohesion ($R = .08$), Teacher Support ($R = .07$), Dating Aggression ($R = .01$), Student Support ($R = .14$), and Safety ($R = .05$). Complete results are outlined in Table 10.

Table 11

Simple Regression Results between Investment (Criterion Variable) and Predictor Variables

Cognitive Engagement - Investment (CV)			
Predictor Variables (PV)	T value	<i>p</i>	R
1. Alienation	-5.79	.00	.10
2. SPCC	4.78	.00	.07
3. Teacher Support	6.24	.00	.11
6. Relational Victimization	-1.05	.29	.00
7. Dating Aggression	-3.28	.00	.03
8. Student Support	6.15	.00	.11
9. Safety	-2.97	.00	.02
10. SPPSC	-1.93	.05	.01
12. Student Voice	.07	.95	.00

Note. Findings at the significance level $p < .05$ are in boldface.

Investment is a willingness to try things that are challenging, knowing that hard work equates to success and achievement. Invested students tend to keep trying and use mistakes as an avenue to learning.

Results suggested that a number of the Predictor Variables studied play a role in the development of Investment, a component of Cognitive Engagement. The results are very similar to those for Goals. Specifically, Students' Perception of Classroom Cohesion, Teacher Support and Student Support were protective factors that significantly

forecasted Investment. Risk factors that predicted Investment were Alienation, Dating Aggression, Safety, and Students' Perception of Peer Students' Perception of Peer Social Climate. It appears very important that school professionals plan to build classroom contexts where students perceive warmth and collaboration in learning with a teacher who is assessable, supportive and continually assessing the needs of his/her students.

Finding 1.2. The following predictor variables predicted Investment, a component of cognitive engagement, at a significant level ($p < .05$) are Alienation ($R = .099$), Students' Perception of Classroom Cohesion ($R = .07$), Teacher Academic Support ($R = .11$), Dating Aggression ($R = .03$), Student Personal Support ($R = .11$) and, Safety ($R = .02$). Table 11 provides complete regression results.

Table 12

Simple Regression Results between Belonging (Criterion Variable) and Predictor Variables

Emotional Engagement - Belonging (CV)

Predictor Variables (PV)	T value	P	R
1. Alienation	-4.90	.00	.07
2. SPCC	11.10	.00	.29
3. Teacher Support	6.55	.00	.12
4. Relational Victimization	-2.89	.00	.03
5. Dating Aggression	-3.04	.00	.03
6. Student Support	12.41	.00	.34
7. Safety	-3.75	.00	.04
8. SPPSC	-1.61	.15	.01
9. Student Voice	1.45	.15	.01

Note. Findings at the significance level $p < .05$ are in boldface.

Belonging is a basic human need (Maslow, 1943). In this study, examining grade nine students, the significance of contextual conditions predictive of belonging suggests that the classroom context is extremely important in the promotion of Belonging at school. The degree of unique predictiveness of Students' Perception of Classroom Cohesion, Teacher Academic Support, and Student Personal Support, call attention to the need to intentionally sculpt the classroom conditions, not to let them unfold inadvertently as happens in numerous classrooms, as they are extremely important for the development of student engagement. Of note, the higher influence of Student Personal Support versus Teacher Academic Support scores may be a result of the developmental stage of study participants. Students in grade nine may find the acceptance of peers more important than that of adults in the development of Belonging.

Risk factors which uniquely predicted Belonging were Alienation, Relational Victimization, Dating Aggression, Safety, and Students' Perception of Peer Students' Perception of Peer Social Climate. Results indicated the importance of the classroom context in the development of student engagement in school. As well, classroom protective factors could provide a mediating effect to the risk factors in the classroom and in other school contexts.

Finding 1.3. The following predictor variables, predicted Belonging, a component of emotional engagement, at a significant level ($p < .05$): Students' Perception of Classroom Cohesion ($R = .29$), Teacher Support ($R = .12$), Relational Victimization ($R = .03$) Dating Aggression ($R = .03$), Student Support ($R = .34$), and Safety ($R = .04$). Table 12 provides complete simple regression results.

Table 13

Simple Regression Results between Valuing School (Criterion Variable) and Predictor Variables

Emotional Engagement - Valuing School (CV)

Predictor Variables (PV)	T value	<i>p</i>	R
1. Alienation	-4.40	.00	.06
2. SPCC	2.96	.00	.03
3. Teacher Support	8.84	.00	.21
6. Relational Victimization	-.84	.40	.00
7. Dating Aggression	-1.71	.09	.01
8. Student Support	6.04	.00	.11
9. Safety	-.86	.39	.00
10. SPPSC	-3.36	.00	.04
12. Student Voice	.47	.64	.00

Note. Findings at the significance level $p < .05$ are in boldface.

Valuing School, a component of Emotional Engagement, is the belief by students that school is an important facet in their lives, and for their future. Students, who value schooling, value learning, believe it is relevant, and value the experience of attending school. Results indicated that Teacher Academic Support was the most significant contextual factor measured in this study, which uniquely supported the student perspective that attending school was valuable to them. Other contextual conditions were less influential: Alienation, Students' Perception of Classroom Cohesion, Student Support, Dating Aggression, and Students' Perception of Peer Students' Perception of Peer Social Climate.

Finding 1.4. The following variables (PV), predicted Valuing School, a component of Emotional Engagement, at a significant level ($p < .05$): Alienation ($R = .06$), Students' Perception of Classroom Cohesion ($R = .03$), Teacher Support ($R = .21$), Student Support ($R = .11$) and Students' Perception of Peer Social Climate ($R = .04$). Table 13 provides complete results.

Table 14

Simple Regression Results between Attendance (Criterion Variable) and Predictor Variables

Behavioural Engagement - Attendance (CV)

Predictor Variables (PV)	T value	<i>p</i>	R
1. Alienation	-1.22	.23	.01
2. SPCC	-4.11	.00	.03
3. Teacher Support	1.97	.60	.00
4. Relational Victimization	-.06	.95	.00
5. Dating Aggression	-.13	.90	.00
6. Student Support	.47	.64	.00
7. Safety	-.23	.82	.00
8. Students' Perception of Peer Social Climate	.28	.78	.00
9. Student Voice	1.07	.29	.00

Note. Findings at the significance level $p < .05$ are in boldface.

Attendance, a measure of Behavioural Engagement, examined the amount of time students were absent from school without permission, whether they skipped classes, or whether they arrived late to school. The regressions indicated that, for the most part, student perceptions of contextual conditions did not predict Attendance.

Finding 1.5. Students' Perception of Classroom Cohesion (PV), predicted Valuing School, a component of Emotional Engagement, at a significant level ($p < .05$). Complete results are in Table 14.

Research Question #2

To what extent is the predictive power of students' perceptions of contextual conditions for student engagement different for male and female students?

Finding 2.1 Independent-samples t-tests compared the predictor variable mean scores for males and females. There was one significant difference in one scale, Relational Victimization (see Table 15). The magnitude of the difference in means (mean difference = 2.22, 95% CI: 1.00 to 3.35) was small (eta squared = .04) (proposed by Cohen, 1988, pp. 284-7). Table 15 provides complete results of this analysis.

Table 15

T-test Results for Male and Female Groups for Differences in Predictor Variables

PV	Males N= 166		Females N= 141		t	p (2-tailed)
	M	SD	M	SD		
Alienation	2.83	.78	2.73	.72	-1.07	.29
SPCC	3.89	.88	3.97	.84	.83	.41
Teacher Support	3.71	.91	3.78	.76	.71	.48
Relational Victimization	10.67	4.73	12.89	5.95	3.58	.00
Social Relations	1.81	.68	1.91	.65	1.38	.17
Student Support	3.41	.91	3.47	.97	.60	.55
Safety	1.45	.98	1.38	.82	-.73	.47
Voice	3.12	1.27	2.95	1.21	-1.16	.25
SPPSC	2.09	.69	2.22	.67	1.70	.09

Note. Findings at the significance level $p < .05$ are in boldface.

Research Question #3

To what extent is there an additive effect of school context factors, where variables work additively or interactively, in the predictive power of student engagement?

Finding 3.1. Sequential regressions assessed the ability of predictor variables (Students' Perception of Classroom Cohesion, Student Personal Support and Teacher Academic Support) to predict a criterion variable (Belonging – a scale of Emotional Engagement). The total variance explained by the model is 40.1%, $F(3, 303) = 67.68$, $p < .001$. In the final model, all of the predictor variable scales were statistically significant with $p < .005$.

Finding 3.2. Hierarchical multiple regressions assessed the ability of predictor variables (Teacher Academic Support, Student Support, Students' Perception of Classroom Cohesion,) to predict a criterion variable (Valuing School – a measure of Emotional Engagement) after controlling for the influence of School Students' Perception of Peer Social Climate. School Students' Perception of Peer Social Climate entered at Step 1, explained 3.6% of the variance in Valuing School. After the entry of Students' Perception of Classroom Cohesion, Student Personal Support and Teacher Academic Support at Step 2, the total variance explained by the model is 26.7%, $F(4, 302) = 27.46$, $p < .001$. The three control scales explained an additional 23.0% of the variance in Belonging, after controlling for Students' Perception of Peer Social Climate, R^2 change = .24, F change $(3, 302) = 31.63$, $p < .001$. In the final model, all of the PV scales were statistically significant with $p < .05$.

Finding 3.3. Hierarchical regressions assessed the ability of predictor variables (Student Personal Support and Teacher Academic Support) to predict a criterion variable

(Goals – a scale of Cognitive Engagement), after controlling for the influence of Alienation, Relational Victimization, and Dating Aggression. Alienation, Relational Victimization, and Dating Aggression, entered at Step 1, and explained 17% of the variance in Goals. After the entry of Student Personal Support and the Teacher Academic Support at Step 2, the total variance explained by the model is 26.9%, $F(5, 301) = 22.13$, $p < .000$. The two control scales explained an additional 10.1% of the variance in Goals, after controlling for Alienation, Dating Aggression and Relational Victimization, R squared change = .10, F change $(2, 301) = 20.75$, $p < .001$. In the final model, all of the predictor variable scales were statistically significant with $p < .05$.

Finding 3.4. Hierarchical regressions assessed the ability of predictor variables (Student Emotional and Teacher Academic Support) to predict a CV (Investment – a scale of Cognitive Engagement), after controlling for the influence of Alienation. Entered at Step 1, Alienation explained 10% of the variance in Valuing School. After the entry of the Student Personal Support and Teacher Academic Support at Step 2, the total variance explained by the model is 20.7%, $F(3, 303) = 26.31$, $p < .000$. The two control scales explained an additional 10.8% of the variance in Valuing School, after controlling for Alienation, R squared change = .11, F change $(2, 303) = 20.53$, $p < .001$. In the final model, all of the predictor variable scales were statistically significant with $p < .05$.

A summary of regression results used to answer Research Question #3 follows in Table 16.

Table 16

Summary of Hierarchical Regression Analyses for Variables Predicting Components of Student Engagement (N = 307)

Criterion Variables	Predictor Variables	R ²	p	T Score
Belonging	Student Support	.40	<.001	6.48
	SPCC			3.99
	Teacher Academic Support			3.22
Value School	Teacher Academic Support	.27	<.001	7.30
	Student Support			5.01
	SPCC			-3.11
	SPPSC			-3.41
Attendance	No Significant Findings			
Goals	Student Support	.27	<.001	5.20
	Alienation			-4.30
	Relational Victimization			5.00
	Dating Aggression			-3.72
	Teacher Academic Support			2.23
Investment	Teacher Academic Support	.21	<.001	4.58
	Student Support			3.16
	Alienation			-3.65

Research Question # 4

To what extent is the predictive power of specific at-risk students' perceptions of contextual conditions, predictive of emotional, cognitive, and behavioural engagement?

Regression Analyses examined subgroups of students, identified by his/her scores on specific questions or measures, as at risk for negative life trajectories. Subgroups included for analyses were; (a) students experiencing low levels of achievement, (b) students suspended during the past year, and (c) students displaying violent risk behaviours. Student perceptions of school contextual conditions (predictor variables) predicted level of student engagement components (criterion variables). Tables 17 to 19 provide regression analyses results.

Students Experiencing Low Achievement

Students selected for inclusion in this subgroup were those students who reported achieving grades of “mostly 60’s” or lower. Stepwise regressions identified predictor variables for inclusion in final hierarchical regression models ($n = 82$).

Finding 4.1 Hierarchical regressions assessed the ability of a PV (Students' Perception of Classroom Cohesion) to predict a CV (Belonging – a scale of Emotional Engagement), after controlling for the influence of Safety. Safety entered at Step 1, explained 52.4% of the variance in Belonging. After the entry of the Students' Perception of Classroom Cohesion variable at Step 2, the total variance explained by the model is 64.8%, $F(2, 80) = 72.60, p < .001$. The one control scale explained an additional 12.3% of the variance in Belonging, after controlling for Safety, $R^2 \text{ change} = .12, F \text{ change}(1, 80) = 27.68, p < .001$. In the final model, all of the PV scales were statistically significant with $p < .001$.

Finding 4.2 Hierarchical regressions assessed the ability of PVs (Teacher Academic Support, Student Personal Support, Student Voice) to predict a CV (Value Schooling – a scale of Emotional Engagement) after controlling for the influence of Relational Victimization, which entered at Step 1, explained 1.0% of the variance in Valuing School. After the entry of the Teacher Academic Support, Student Personal Support, and Student Voice variables at Step 2, the total variance explained by the model is 40.2%, $F(4, 78) = 12.96, p < .001$. The three control scales explained an additional 39.2% of the variance in Valuing School, after controlling for Relational Victimization, R^2 squared change = .39, F change $(3, 78) = 17.25, p < .001$. In the final model, all of the PV scales were statistically significant with $p < .04$.

Finding 4.3 Multiple regressions assessed the ability of a PV (Student Voice) to predict a CV (Attendance – a scale of Behavioural Engagement). The total variance explained by the model is 6.9%, $F(1, 81) = 5.94, p < .02$. In the final model, the PV scale was statistically significant with $p < .02$.

Finding 4.4 Hierarchical regressions assessed the ability of PVs (Students' Perception of Classroom Cohesion, Student Personal Support) to predict a CV (Goals – a scale of Cognitive Engagement) after controlling for the influence of Relational Victimization and Dating Aggression, which entered at Step 1, explained 6.2% of the variance in Investment. After the entry of the Students' Perception of Classroom Cohesion and Student Personal Support at Step 2, the total variance explained by the model is 64.5%, $F(4, 78) = 34.93, p < .001$. The two control scales explained an additional 58.2% of the variance in Goals, after controlling for Relational Victimization

and Dating Aggression, R squared change = .58, F change (2, 78) = 63.10, $p < .001$. In the final model, all of the PV scales were statistically significant with $p < .05$.

Finding 4.5. Multiple regressions assessed the ability of PVs (Teacher Academic Support and Students' Perception of Classroom Cohesion) to predict a CV (Investment – a scale of Cognitive Engagement). The total variance explained by the model is 62.9%, F (2, 79) = 66.83, $p < .001$. In the final model, the PV scale was statistically significant with $p < .001$.

Table 17

Summary of Hierarchical and Sequential Regression Analyses for Variables Predicting Dimensions of Student Engagement for Students Experiencing Low Achievement (n = 82)

CV	PV	R ²	p	T
Belonging	SPCC	64.8%	<.001	5.26
	Safety			-4.54
Value Schooling	Teacher Academic Support	40.2%	<.001	4.56
	Relational Victimization			-2.87
	Student Personal Support			2.81
	Voice			2.09
Attendance	Student Voice	6.9%	<.02	2.44
Goals	Relational Victimization	64.5%	<.001	-4.34
	Dating Aggression			-3.25
	SPCC			5.05
	Student Personal Support			2.11
Investment	Teacher Academic Support	62.9%	<.001	6.71
	SPCC			4.44

Students Suspended within the Last Year

Students who self-identified for receiving a suspension over the previous year were included in this subgroup ($n = 43$).

Finding 5.1. Sequential regressions assessed the ability of PVs (Student Personal Support and Teacher Academic Support) to predict a CV (Belonging – a scale of Emotional Engagement). The variance explained by this model is 46.9%, $F(2, 40) = 17.69, p < .001$. In the final model, all of the PV scales were statistically significant with $p < .04$.

Finding 5.2. Sequential regressions assessed the ability of a PV (Students' Perception of Peer Social Climate) to predict a CV (Valuing School – a scale of Emotional Engagement). The total variance explained by the model is 40.0%, $F(1, 41) = 28.38, p < .001$. In the final model the PV scale was statistically significant with $p < .001$.

Finding 5.3. Hierarchical regression assessed the ability of a PV (Students' Perception of Classroom Cohesion) to predict a CV (Attendance – a component of Behavioural Engagement), after controlling for the influence of Safety that entered at Step 1, and explained 26.5% of the variance in Attendance. After the entry of Students' Perception of Classroom Cohesion at Step 2, the total variance explained by this model is 35.7%, $F(2, 40) = 11.12, p < .001$. The control scale explained an additional 9.3% of the variance in Attendance, after controlling for Safety, R^2 change = .09, F change (1, 40) = 5.76, $p < .02$. In the final model, all of the PV scales were statistically significant with $p < .02$.

Finding 5.4. Sequential regressions assessed the ability of a PV (Students' Perception of Peer Social Climate) to predict a CV (Goals – a scale of Cognitive

Engagement). The total variance explained by the model is 23.8%, $F(1, 41) = 12.80$, $p < .001$. In the final model, the PV scale was statistically significant with $p < .05$.

Finding 5.5. Sequential regressions assessed the ability of a PV (Students' Perception of Peer Social Climate) to predict a CV (Investment – a scale of Cognitive Engagement). The total variance explained by this model is 52.9%, $F(1, 41) = 45.99$, $p < .001$. In the final model, the PV scale was statistically significant with $p < .001$.

Table 18

Summary of Hierarchical and Sequential Regression Analyses for Variables Predicting Dimensions of Student Engagement for Students Experiencing Suspension (n = 43)

CV	PV	R ²	p	T
Belonging	Student Personal Support	41.4%	<.005	5.46
	Teacher Academic Support			2.13
Value Schooling	Students' Perception of Peer Social Climate	40.0%	<.05	-5.23
Attendance	Safety	19.8%	<.001	-4.38
	SPCC			-2.40
Goals	Students' Perception of Peer Social Climate	23.8%	<.05	-3.58
Investment	Students' Perception of Peer Social Climate	52.9%	<.001	-6.78

Students Displaying Violent Risk Behaviour

Students included in this group reported violent behaviour scored one standard deviation above the median score of the total sample on the scale of Violent Risk Behaviour (n=47).

Finding 6.1. Multiple regressions assessed the ability of a PV (Students' Perception of Classroom Cohesion) to predict a CV (Belonging – a scale of Emotional Engagement). The total variance explained by the model is 60.5%, $F(1, 46) = 112.02$, $p < .001$. In the final model, all of the PV scales were statistically significant with $p < .001$.

Finding 6.2. Hierarchical regressions assessed the ability of PVs (Student Support and Students' Perception of Classroom Cohesion) to predict a CV (Valuing School – a scale of Emotional Engagement), after controlling for the influence of Relational Victimization and School Students' Perception of Peer Social Climate that entered at Step 1 and explained 18.6% of the variance in Valuing School. After the entry of Student Personal Support and Students' Perception of Classroom Cohesion at Step 2, the total variance explained by the model is 50.3%, $F(4, 42) = 17.69$, $p < .001$. The two control scales explained an additional 31.6% of the variance in Valuing School, after controlling for School Students' Perception of Peer Social Climate and Relational Victimization, R^2 change = .32, F change (1, 42) = 22.26, $p < .001$. In the final model, all of the PV scales were statistically significant with $p < .007$.

Finding 6.3. Sequential regressions assessed the ability of a PV (Teacher Academic Support) to predict a CV (Attendance – a scale of Behavioural Engagement). The total variance explained by the model is 9.2%, $F(1, 46) = 7.37$, $p < .008$. In the final model, all of the PV scales were statistically significant with $p < .008$.

Finding 6.4. Hierarchical regressions assessed the ability of a PV (Student Personal Support) to predict a CV (Goals – a scale of Cognitive Engagement), after controlling for the influence of Relational Victimization and School Students' Perception of Peer Social Climate which entered at Step 1, and explained 11.3% of the variance in Goals. After the entry of Student Personal Support at Step 2, the total variance explained by the model is 58.7%, $F(3, 43) = 33.65, p < .001$. The control scale explained an additional 47.4% of the variance in Goals, after controlling for Relational Victimization and School Students' Perception of Peer Social Climate, $R^2 \text{ change} = .47, F \text{ change}(1, 43) = 81.48, p < .000$. In the final model, all of the PV scales were statistically significant with $p < .001$.

Finding 6.5. Hierarchical regressions assessed the ability of a PV (Student Personal Support) to predict a CV (Investment – a scale of Cognitive Engagement), after controlling for the influence of Relational Victimization and School Students' Perception of Peer Social Climate which entered at Step 1, and explained 12.7% of the variance in Investment. After the entry of Student Personal Support at Step 2, the total variance explained by the model is 45.5%, $F(3, 43) = 21.62, p < .001$. The control scale explained an additional 35.0% of the variance in Investment, after controlling for Relational Victimization and School Students' Perception of Peer Social Climate, $R^2 \text{ change} = .35, F \text{ change}(1, 43) = 47.6, p < .001$. In the final model, all of the PV scales were statistically significant with $p < .004$.

Table 19

Summary of Hierarchical and Sequential Regression Analyses for Variables Predicting Dimensions of Student Engagement for Students Displaying Violent Risk Behaviour (n = 47)

CV	PV	R ²	p	T
Belonging	SPCC	60.5%	<.001	10.58
Value Schooling	Relational Victimization	50.3%	<.001	5.91
	Student Personal Support			5.81
	SPPSC			-3.36
	SPCC			-2.77
Attendance	Teacher Academic Support	9.2%	<.009	2.71
Goals	Student Personal Support	58.7%	<.001	9.03
	Relational Victimization			5.98
	SPPSC			-4.45
Investment	Relational Victimization	45.5%	<.001	-2.94
	SPPSC			5.38
	Student Personal Support			6.80

Collation of Influential Predictor Variables

Within the regression models provided in this chapter, specific variables surfaced as consistent predictors of student engagement. There was variation between the groups in the predictor variables that appeared most influential: the total sample, the low achievement subgroup, the suspended subgroup, and the violent risk behaviour group.

Predictor variables that consistently emerged in the regression models of the five elements of student engagement measured in this investigation, in order of influence, are:

Total Sample Analyses

- I. Student Personal Support
- II. Teacher Academic Support
- III. Alienation
- IV. Students' Perception of Classroom Cohesion

Low Achievement Subgroup Analyses

- I. Students' Perception of Classroom Cohesion
- II. Teacher Academic Support
- III. Student Personal Support
- IV. Relational Victimization

Suspended Students Subgroup Analyses

- I. School Students' Perception of Peer Social Climate
- II. Student Personal Support

Violent Risk Behaviour Subgroup Analyses

- I. Student Personal Support
- II. Relational Victimization
- III. School Students' Perception of Peer Social Climate

Summary

This chapter provided descriptions of preliminary analysis, data screening, and statistical data analyses as well as results from the subsequent data analyses conducted to determine the predictive strength of school contextual conditions on student engagement. Research questions provided the framework for conveying study results; requisite analyses were described in conjunction with results specific to discrete research questions. A collation of significant findings ended this chapter.

CHAPTER FIVE

STUDY DISCOURSE

This chapter offers an overview of the investigation, its procedures, and its guiding questions. Findings, along with resultant conclusions, precede a reconceptualization of the initial conceptual framework, followed by implications for school restructuring. Finally, implications for practice and for future research are considered.

Regression analyses showed varying predictabilities of student engagement using students' perception of school contexts. Two findings emerged as most valuable in extending the learning about student engagement in school. First, for students in this study, antecedent protective factors, in particular those at the classroom level--especially positive personal relationships--appeared to have a stronger relationship to the three components of student engagement than did antecedent risk factors. Second, for specific at-risk subgroups within the student sample, such as those students experiencing academic failure at school, classroom contextual conditions appeared even more influential in the promotion of engagement in school than the same antecedent conditions for the larger sample. As well, at-risk students showed more influence from contextual risk factors than the larger study sample.

Summary of the Problem and Procedures

The goal of this study was to gain a deeper understanding of the influence of school contexts in the development of the multidimensional construct of student engagement. Fredricks et al. (2004) encouraged the study of antecedents of the three

types of engagement simultaneously to ascertain which contextual aspects are more vital in enhancing each of the three types of engagement for different populations.

Consequently, this research examined classroom, peer, and school-wide contextual conditions to identify the most influential antecedents for each type of engagement, for the total student sample, for males and females, and for specific at-risk subgroups. The questions that guided this investigation were:

- I. To what extent are students' perceptions of their school contexts predictive of levels of the three types of student engagement: cognitive, emotional, and behavioural?
- II. To what extent is the predictive power of students' perceptions of contextual conditions for student engagement different for male and female students?
- III. To what extent is there an additive effect, when school context factors work together, in the prediction of student engagement?
- IV. To what extent is the predictive power of specific at-risk students' perceptions (suspended students, academically unsuccessful students, and students displaying violent risk behaviour) of contextual conditions, predictive of emotional, cognitive and behavioural engagement?

This research examined the predictability of cognitive, emotional, and behavioural student engagement from students' perceptions of school contextual factors. Grade nine students reported their perceptions in an online survey, administered twice, near the beginning and near the end of the school year. Simple, stepwise, sequential and hierarchical regression analyses calculated the power of student impressions of contextual conditions (time one of data collection) to predict levels of the three types of engagement

(at time two). SPSS professional software (version 16.0) facilitated data analyses in this investigation.

Study Findings

Students' perceptions of their school microsystem contexts were predictive of student engagement. Classroom contextual factors held the most predictive power for both emotional and cognitive components of student engagement. In the analyses of the entire student sample, contextual conditions did not uniquely predict Attendance, the construct included in this study to measure Behavioural Engagement.

Overall, students' perceptions of classroom microsystem conditions predicted Emotional and Cognitive Engagement more powerfully than other microsystem context conditions. Only in one instance did a risk factor, Alienation, a scale of the classroom microsystem, emerge as the most powerful unique predictor of an engagement factor, Goals. Largely, protective factors were more predictive of Emotional and Cognitive Engagement than risk factors, suggesting classroom protective conditions as the most important protective factors in the development of student engagement.

Male and female students perceived classroom contextual conditions very similarly. One small difference resulted as girls reported a slightly higher incidence of Relational Victimization (Males, $M = 10.67$, Females, $M = 12.89$) than did males. This small yet significant result may be due to the manner in which girls use relationships to control and manipulate social situations. Bukowski & Sippola (2006) found that girls used relational victimization strategies such as exclusion and rumours to manipulate social situations to support personal agendas more often than boys.

Additive Effects of Contextual Factors in the Prediction of Engagement Factors

Study results supply preliminary empirical evidence that, together, school contextual factors accounted for a significant proportion of variance in Cognitive and Emotional Engagement, while classroom factors proved the most influential. However, student perceptions of school microsystem contextual conditions were not predictive of the study's scale of Behavioural Engagement (Attendance) with the total study sample. Fredricks et al. (2004) pointed out that monitoring attendance is looking for the absence of negative behaviour. Perhaps attendance has an indirect relationship to school microsystem contexts through Cognitive and Emotional Engagement, or the absence thereof. Possibly, then, low attendance is an outcome of lack of engagement and not an aspect for consideration in studies examining contextual conditions which predict the three components of student engagement.

Sensitivity of Engagement Dimensions to Risk and Protective Factors

Overall, conditions in each of the three school contexts (classroom, peer and school-wide) predicted two of the three dimensions of student engagement (Emotional Engagement and Cognitive Engagement). A number of regression models including both risk and protective contextual factors significantly predicted engagement, while classroom contextual scales were most predictive of student engagement.

Cognitive Engagement

Cognitive engagement is a mental 'investment' in learning. It involves the commitment and reflection required to master academic skills, and to understand

complex concepts (Fredricks et al., 2004). Two scales in this study, Goals and Investment, assessed students' Cognitive Engagement.

Goals showed sensitivity to a number of risk and protective factors. Students' perceptions of school contextual factors accounted for a significant proportion of the model variance in Goals (27%). After controlling for Alienation, Dating Aggression, and Relational Victimization (risk factors), Student Personal Support and Teacher Academic Support explained 10% of the variance in the model.

Alienation (risk factor) was influential (10%) in explaining the variance in Investment. Two protective factors, Student Personal Support and Teacher Academic Support accounted for 11% of Investment.

Emotional Engagement

In this study, Emotional Engagement at school was conceptualized through two components; (a) feelings of acceptance and appreciation in school, and feeling part of and pride in school community membership (Finn, 1989), and (b) valuing of the learning goals of their classroom microsystem (Goodenow, 1991). The scales used to assess these components of Emotional Engagement were Belonging and Valuing School.

Protective factors explained the majority of variance accounted for through the regression model of Belonging. Students' Perception of Classroom Cohesion, Student Personal Support and Teacher Academic Support explained 36% of the variance after controlling for Safety (4%). Similar to the results for Belonging, protective relational factors provided a significant contribution to the overall variance of the model of Valuing School. Teacher Academic Support, Student Support and Students' Perception of Classroom Cohesion accounted for 30% of the variance. The risk factors, School

Students' Perception of Peer Social Climate, Relational Victimization and Alienation explained 9%.

Additively, school contexts accounted for a significant proportion of Cognitive and Emotional Engagement, both dimensions of student engagement as described by Fredricks et al (2004). Cognitive Engagement showed more sensitivity to risk factors than did Emotional Engagement for this sample of grade nine students. Risk and protective factors accounted for a similar magnitude of the variance in Cognitive Engagement while results for Emotional Engagement showed the risk factors exhibiting significantly less influence than did the protective factors.

Influential School Contextual Factors

Specific protective and risk factors surfaced as those contextual factors which proved most influential on student engagement dimensions.

Alienation

Alienation encompasses both relational and academic distancing in the classroom. It presented as an influential risk factor in the development of Cognitive Engagement. This supports Bronfenbrenner's (2005) belief that bi-directional interpersonal relationships can degrade the quality of an environment, in this case, evidenced in the manner Alienation affected student engagement.

Student Personal Support

Student Personal Support, considered in this study as part of the Peer context, specifically measured the classroom peer support perceived by students. Within the hierarchical regression models that calculated the degree of influence of the predictor

variables, Student Personal Support accounted for 34% of the variance in Belonging, 14% of Goals, 4% of Valuing School and 2% of Investment. Of note is the degree of the possible compensatory effect that Student Personal Support presented on Belonging. The other variables accountable for Belonging were both protective factors exhibiting far less influence: Students' Perception of Classroom Cohesion (4%) and Teacher Academic Support (2%). These results suggested classroom Student Personal Support as integral in Belonging for students in grade nine.

Teacher Academic Support

This classroom contextual protective factor offered significant power in the prediction of engagement components. Interestingly, not as influential as Student Personal Support, Teacher Academic Support accounted for 18% of the variance in Valuing School and 11% of Investment. Its power for predicting Goals and Belonging was a great deal less (2% and 1% respectively). Results suggest that there was not a direct relationship between the teacher and the development of Goals and Belonging for these grade nine students. The teacher's role may be one of supporting and/or facilitating the development of a classroom climate and culture which promotes positive peer relationships. One interesting avenue of investigation purports that peer relationships with classmates immerse them in processes such as participation/inclusion and support/conflict, which affect their ability to adapt to a context and engage (Ladd, Kochenderfer & Coleman, 1997).

Overall, school microsystem contexts influenced Cognitive and Emotional engagement additively; especially influential was the immediate classroom microsystem. These findings support Bronfenbrenner's bioecological theory (1979) as the quality of the

classroom, measured in terms of the classroom cohesion as well as teacher and peer support, provide an environment, which promoted engagement in learning and in the school community. Bronfenbrenner and Morris (1998) posited the need for proximal processes to foster the development of human competence and character. Results suggested that Emotional and Cognitive Student Engagement, flourish or not, through the quality of bi-directional interpersonal relationships, and how well the classroom functions as a learning community.

Students At-Risk for Negative Life Trajectories

Students are not created equal. A number of factors such as traumatic life experiences, difficult temperament, low cognitive functioning, weak familial support systems and low socioeconomic status, place students “at-risk” for poor life trajectories (Masten, 1994). This study examined differences in the influence of school contextual conditions on student engagement for three at-risk populations within the larger study sample identified as at-risk for negative life trajectories. Students included in the subgroups for analyses were those students who reported suspension from school within the previous year, those who experienced a lack of academic success, or those who self-reported involvement in violent risk behaviour.

Academically Unsuccessful Students

Previous research is clear that student engagement is predictive of academic achievement. Vital requirements for engagement are a school culture of high academic expectations for all, developmentally appropriate programming and support for learning (Klem & Connell, 2003, Willms, 2010), positive bi-directional teacher and student

relationships (Osterman, 2000), and physical, emotional and intellectual safety (Butcher & Manning, 2005). The students included in the academically unsuccessful group were those who reported that their grades were “mostly 60’s” or lower. This subgroup represented 27% of the total sample (n = 82).

The hierarchical regression analyses for this group of students provided strong empirical evidence that Students’ Perception of Classroom Cohesion and Teacher Academic Support were the classroom contextual conditions most important for engagement. Additionally, Safety displayed significantly higher power in the prediction of Belonging for this subgroup than that evidenced with the larger sample. Overall, classroom contextual conditions were the most influential in engagement models for students reporting poor academic success, however, risk factors showed more influence in regression models than they did with the total sample analysis.

Contextual factors explained significant proportions of variance in models of Goals (65%) Investment (63%), and Valuing School (37%). Within, these models, significant predictor variables included Students’ Perception of Classroom Cohesion, Teacher Academic Support, while small effects resulted from the peer context factors, Relational Victimization and Dating Aggression (4%). For this group of students who experienced poor academic outcomes, School Safety explained 52% of the variance in Belonging, while Students’ Perception of Classroom Cohesion accounted for the rest in the model (12%). Strong significance for Safety as a negative predictor of Belonging is unique to this group of students. The etiologies of students’ unsafe feelings are unclear as students merely shared how often they felt unsafe at school. Given the group’s experience with low academic achievement, unsafe feelings could result from operating at a

frustration level in schoolwork and possibly a diminished sense of self-efficacy. It is doubtful that unsafe feelings resulted from peer victimization as the scale of Relational Victimization only predicted a small amount of Belonging for this subgroup.

Interestingly, Student Voice uniquely predicted Attendance (7%), this study's only gauge of Behavioural Engagement. No significant predictors of Attendance resulted from measures of contextual conditions for the total sample.

Two important results came to light from examining this group of students. Classroom conditions appeared even more influential in the development of Valuing School, Goals, and Investment for these students than they were for the total sample of students. Secondly, Safety, a negative predictor of Belonging, was significantly influential.

Students Suspended from School within the Previous Year

Suspension from school, whether served in or out of school, most often results from infractions of school rules. Misbehaviour as minor as incomplete homework or as serious as physically assaulting another student could earn a suspension, depending upon the discipline practise specific to a school's administration. Suspension is an exclusionary behavioural intervention, one that does not find empirical support in the literature (Skiba & Peterson, 2000).

The specifics of students' behaviour, which garnered suspension is unknown. Forty-three students out of 307 reported suspensions over the previous year, which translates into 14% of the students in this investigation. The frequency or the numbers of suspensions for each student was unstipulated.

The risk factor School Students' Perception of Peer Social Climate proved the most influential contextual condition in the regression models of engagement for suspended students, predicting 40% of Valuing School, 24% of Goals and 53% of Investment. This scale quantifies a student's perception of the high-risk behaviour, such as smoking, sexual activity and drug and alcohol use, practiced by other students in the school. Correlations of study variables showed a negative relationship between risk and protective factors. Thus, School Students' Perception of Peer Social Climate was a negative predictor of engagement. So, results indicated that as the amount a student's perception of at-risk behaviour within the school climate increased, the amount of Investment, Valuing School and Goals tended to decrease.

The incidence and the strength of protective factors were notably less for suspended students than for the larger sample. While Student Personal Support and Teacher Academic Support predicted 41% of Belonging, only Students' Perception of Classroom Cohesion played a role in the prediction of the remaining scales of engagement (9% in the prediction of Attendance). The risk factor, Safety, played a significant role in the prediction of Attendance (27%), a very different result that for the larger sample where no contextual factors were found to predict Attendance.

Overall, the degree of the variance explained by contextual factors was higher for students who had experienced suspension within the previous year. An interesting difference from the total sample results was that suspended students appeared much more susceptible to contextual risk factors and than other students. For these students relationships with peers and teachers were not as predictive of engagement as they were for the larger study sample.

Students Exhibiting Violent Risk Behaviour

Most adolescents stay connected to parents and families while they establish new relationships and develop a separate sense of self; an adolescent's role as described by Erikson (1968) is to detach from parents as they become autonomous. Some youth experience significant problems during this process of detachment and engage in risk behaviour. Lerner (2002) established that the behaviours which present the most threat for adolescents are drug and alcohol use, risky sexual behaviour, school failure, and violence and illegal activity. Sadly, the foremost causes of death among youth are connected to high-risk behaviour which resulted in accidents and violence (Irwin, Burg & Cart, 2002).

Students who participated in the study's survey answered questions about violent risk behaviour. They answered questions such as, Have you stayed out later than your parents said you should? Have you used or bought or tried to sell something you knew was stolen? and Have you tried to force someone to have sex with you? Included in this subgroup are those students who reported behaviour one standard deviation above the median score of the total sample of students on the scale of Violent Risk Behaviour (n=47).

Again, classroom conditions proved the most important in predicting engagement. Students' Perception of Classroom Cohesion accounted for 61% of Belonging while Student Personal Support was the most powerful predictor of Valuing School (26%), Goals (47%) and Investment (33%) after removing the effects of the risk factors, Relational Victimization and School Students' Perception of Peer Social Climate. Relational Victimization accounted for 15% of the variance in Valuing School, 12% of

Investment, and 8% of Goals; a much more significant role in the prediction of engagement scales for this subgroup than for the total sample of grade nine students. Of note is the minimal role that Teacher Academic Support played with this group of students. It predicted 9% of Attendance.

Summary of the Findings

The results from this investigation provided further insight into student engagement. Student identified conditions in classroom, peer, and school-wide contexts significantly predicted two of three components of student engagement for the total student sample and three out of three dimensions of engagement for the subgroups of students considered at-risk for negative life trajectories. In analyses of the total study sample, the most significant contextual factors in the predictions of cognitive and emotional engagement existed in the classroom. All of the classroom contextual factors measured proved significant in analyses, including one risk factor, Alienation. Results provide empirical support for the importance of the classroom context on the development of cognitive and emotional engagement.

Additively, contextual conditions influenced the three types of engagement differently. Results indicated differences in the predictors and in the power of predictors for distinct groups of students. Subgroups of at-risk students showed more influence from risk factors than the larger student sample, especially suspended students. For all groups, the power of some classroom protective factors remained evident. In the analysis of suspended students, protective factors only proved predictive for Belonging.

Reconceptualising the Conceptual Framework

Results delineating the influence of multiple school microsystem contexts on the three types of engagement provided support for the integrated framework which integrated Bronfenbrenner's bioecological topology of human development (1979) and Furlong et al.'s school engagement framework (2003). Bronfenbrenner's bioecological topology explained each context's capacity for influence. Contexts dynamically affected the development of student engagement, a proximal process in the school microsystem. Thus, the integrated conceptual framework did provide a valuable contextual structure of the school microsystem along with a manner in which to gauge the human relationships within them (risk and protective factors).

The initial study framework (Figure 3) included three school contexts as the 'stages' of student engagement. Risk and protective factors, representative of each context, proved influential in predicting engagement to varying degrees. However, the initial study framework failed to display the substantial power of the Classroom Context. The reconceptualised framework (Figure 4) more closely reflects Bronfenbrenner's (1979) Bioecological theory in that the immediate context provides the greatest influence. In the school microsystem, the immediate context is the classroom. Therefore, the reconceptualised framework maintains the contexts or "stages" suggested by Furlong et al.'s (2003) school engagement framework, however, the structure or organization of the new framework adopted Bronfenbrenner's topological perspective with the child at the center and the contexts of the school microsystem surrounding him/her.

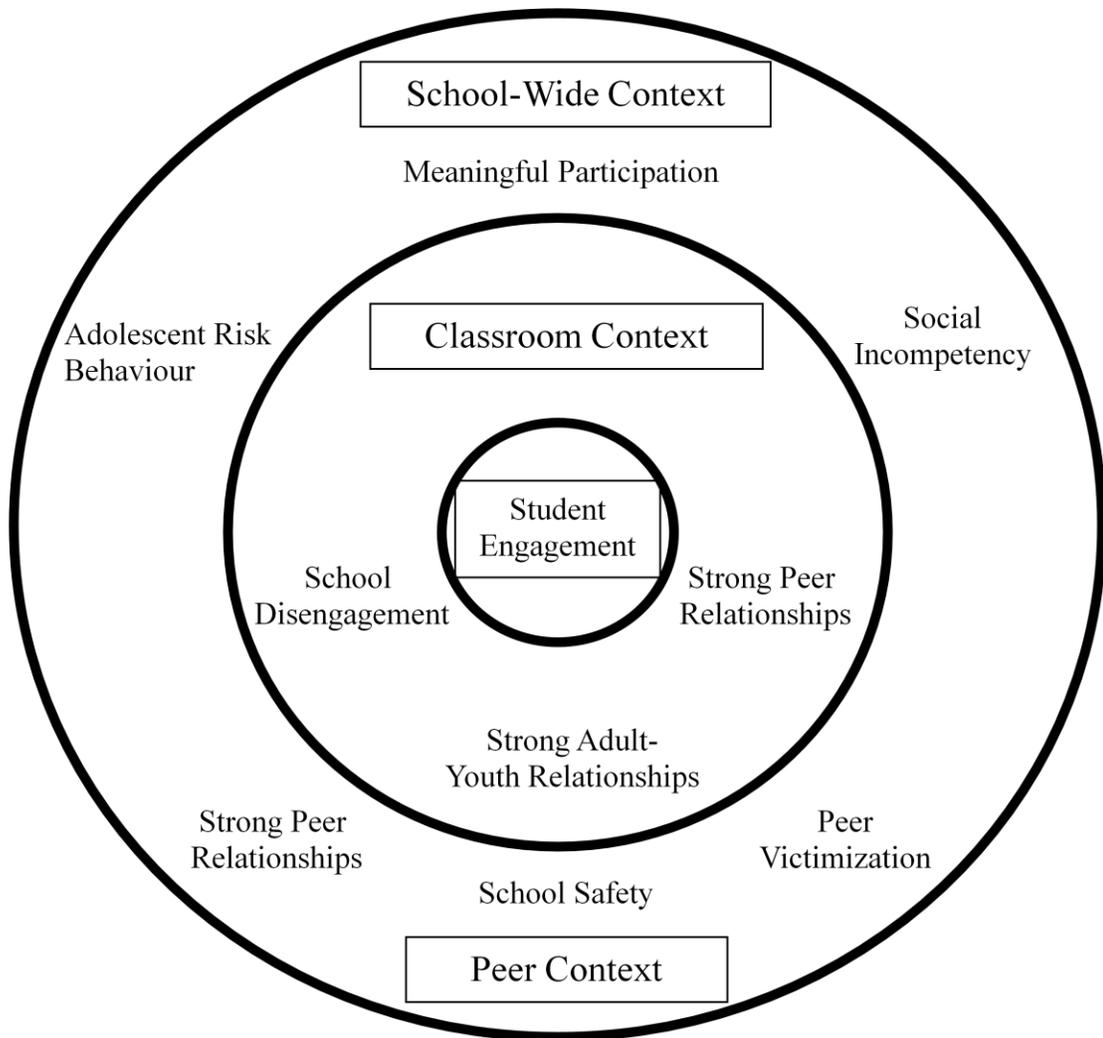


Figure 4. Reconceptualization of the Study Conceptual Framework – The School Microsystem: Risk and Protective Factors Influencing Student Engagement

Implications for School Restructuring

The contextual conditions of early adolescent schooling proved to have significant influence on the development of both Cognitive and Emotional Engagement at school. Overall, classroom conditions proved the most powerful in the prediction of engagement. Student engagement of at-risk groups within the present study sample of students showed even stronger influence from contextual conditions. In addition to classroom protective factors (Peer Personal Support, Students' Perception of Classroom Cohesion, and Teacher Academic Support) were risk factors (Relational Victimization, School Students' Perception of Peer Social Climate and Safety) as important predictors of engagement for the groups of students more at risk for negative life trajectories.

Regretfully, the mere identification of school relationships and school conditions that promote student engagement such as positive peer and teacher relationships, and safe school environments do not provide a complete recipe; the conditions themselves are often evasive and challenging to create in school contexts. Positive teacher and peer relationships, important in the development of classroom learning communities, may prove exigent to create as roughly 30% of Canadian students are at-risk (Willms, 2002) and at-risk populations are more likely to develop unhealthy relationships (Cicchetti & Toth, 2005). Some students do not learn prosocial skills, such as conflict resolution, through observation and require direct instruction and practice to acquire and then transfer the learned behaviour into real world situations.

Schools should embrace universal prevention programs. They are an indispensable part of school programming necessary for the development of healthy relationship skills conducive to the development of positive learning environments as well as prosocial

skills for later life (Adelman and Taylor, 2000; Gresham, 2004; Zins, Weissberg, Wang & Walberg, 2004). For example, *The Fourth R*, is an evidence-based program that works to build healthy relationships while targeting violence, high-risk sexual behaviour, and substance use in adolescents. Based on the belief that all adolescents will at some time face risky social situations and that targeting all adolescents builds resilience, it aims to prepare all youth to navigate challenges they face in life (Jaffe, Wolfe, Crooks, Hughes & Baker, 2004).

Fleming, Haggerty, Catalano, Harachi, Mazza & Gruman (2005) provide significant empirical evidence “that focusing social and behavioural characteristics targeted by preventative interventions can improve academic outcomes” (pg. 348). Greenberg et al. (2003) suggested that educational leaders have concentrated their efforts on instruction and limited time and energy on programs to support social–emotional learning. He posited prevention programs that teach social–emotional skills as an additional avenue for increasing academic performance and for improving the quality of life in schools and in communities. Nevertheless, in the current educational climate of effectiveness and accountability as measured by achievement scores, school administrators are hesitant to commit instructional time and resources for programs that promote social/emotional learning (Fleming et al., 2005).

Most schools do provide a physically safe environment despite the negative attention from the media (Dolmage, 1996). However, there exists great disparity between schools in levels of emotional and intellectual safety (Butcher & Manning, 2005). Practice in some classrooms suggests that teachers require professional development articulating the value of and the manner in which to create classrooms where students feel

intellectually and emotionally safe, and are supported by their teacher and their peers in a cohesive environment. In a study entitled “Teacher Behaviours and Student Success”(2011) conducted by Terry Scott at the University of Louisville (personal communication, March 19, 2011), 1277 direct classroom observations (grades 9-12) resulted in the following findings. Teachers were actively involved in teaching 62.5% of class time—the most common activities while not teaching were using Facebook and reading the paper—the most common instructional grouping was the large group, only 57% of raised student hands received a response, and rates of negative student feedback were slightly higher than those of positive feedback. Scott emphasized that observations targeted teacher behaviours known to support student engagement.

Another study relevant to the discussion of classroom contextual conditions and the need for teacher training and accountability is one conducted by Dr. Sharon Lohmann (2011) at the New Jersey Positive Behaviour School Initiative (personal communication, March 22, 2011). Students were asked what explicit teacher behaviours were important to show them respect. The study sample included 3,692 students from grades 3 to 12. Mostly students identified things they wanted teachers to do (i.e. stop yelling at them) while some gave examples of the requested behaviour. Overall, students asked to be treated with dignity, to be cared about, for teachers to listen to them, to help them solve their problems (be responsive to the need for help, be in tune with the students’ need for help), to make environments positive (create a positive learning atmosphere and lighten students’ workload) and to level the playing field (treat everyone the same, not to pick favourites, pay attention to each student and not to judge them). Overwhelmingly, students nominated behaviours of social support.

Professional development is needed to aid teachers in developing classroom environments where students have a sense of cohesion, feel supported by their peers and teachers, and where instructional strategies are strategically chosen to fuel student engagement. Schools should employ systematic monitoring of engagement levels, especially for students at-risk for negative life trajectories. As well, once teachers receive training in developing healthy classroom contexts, systematic monitoring of contextual classroom conditions warrants attention.

Although there are a number of practices identified in the literature as important in the development of student engagement, some schools (and teachers) are significantly more successful in creating the contexts which promote its development (Willms, 2003). As school teams develop plans for increased student achievement, there are important considerations. Increasing achievement and supporting positive student life trajectories require more than good instruction. Students must be engaged in the school community, feel that they belong, have friends, and that the teachers support them. Prevention programs, which provide social-emotional skill building, are an integral part of creating the safe and responsive school environment necessary for student engagement. As well, educators must make sure that while developing high academic expectations, the necessary supports and differentiated programs are in place so all students remain engaged and reach the high expectations.

New conceptualizations of student engagement provide a more complete picture regarding the indicators of engagement combined with engagement dimensions that align with student activity and the contextual indicators that facilitate that activity (Willms, Friesen & Milton, 2009), along with classroom instruction that builds a classroom culture

conducive the development of student engagement (Marzano & Pickering, 2011). Such multidimensional frameworks for student engagement can fuel school improvement plans to more directly explore “the possibility that increasing students’ experiences of all three dimensions of engagement will help to ensure that education positively affects the opportunities of young people in Canada” (Willms, Freisen & Milton, 2009, p.41).

Limitations and Considerations for Future Research

The researcher included two scales of Behavioural Engagement in the survey instrument; however, the Participation scale proved unreliable and consequently, was removed from further analyses. The remaining scale measured attendance, which is an indicator of Behavioural Engagement in a number of models of student engagement (Fredricks et al., 2004). Yet, in this study, contextual conditions demonstrated little influence on Attendance for the total study sample. Subsequently, future research might consider additional and/or varied scales of behavioural engagement. Perhaps Finn’s (1989) model spanning four levels of participation, encompassing students complying with teacher directions to self-directed involvement in activities such as team sports, yearbook and student governance, could inform a more comprehensive data collection for Behavioural Engagement.

Normality, one of the underlying assumptions of multiple regression, was not met by all variables. Tabachnick and Fidell (2001) suggested that in a large sample, a variable with statistically significant skewness (deviation from normality) often does not deviate enough from normality to make a significant difference in the analysis. As well, the impact of departure from zero kurtosis also diminishes. “For example, underestimates of

variance associated with positive kurtosis disappear with samples of 100 or more cases; with negative kurtosis, underestimates of variance disappears with samples of 200 or more” (Tabachnick & Fidell, 2001, pp.74-75). The current study, then, by this description would qualify as one with a large sample.

This study examined grade nine adolescents from primarily white, middle class families. It is probable that their perceptions of school contextual risk and protective factors are not representative of younger and older adolescents, of those in other geographical areas, of those with different socioeconomic status, or from those with different cultural and familial backgrounds. The results may not generalize to any other group of students. Replication of the present study on further populations could confirm and expand the results.

This study of engagement as multidimensional and as interactive between each student and school contextual factors, adds to the understanding of the complexity of each student’s experiences in school. Initiatives to increase engagement must respond to the complexity with strategically designed programs developed for the needs of targeted populations. In interpreting the findings, however, it is important to remember that the goal in the present study was to highlight the effect of contextual conditions, both risk, and promotive factors, on the contextual conditions within the school microsystem, as one of the interests of the researcher was deepening the understanding of school conditions that support or inhibit student engagement. Future investigations should consider additional risk and protective factors both within the school microsystem and outside it.

The researcher statistically accounted for a number of risk factors in the prediction

of components of engagement. Most appeared less influential than the promotional factors. However, some contextual risk factors surfaced as particularly influential with some sample subgroups (eg. School Students' Perception of Peer Social Climate explained 40% of the variance in Valuing School and 53% of Investment for students who were suspended; Safety explained 52% of the variance of Belonging for students with low academic achievement). These results warrant further exploration to achieve a deeper understanding of the influence of these specific risk factors on the development of engagement. An example of a school-wide factor that merits further investigation is that of school disciplinary practice. The literature provides mixed opinions on the influence of different disciplinary practices on student engagement (Fredricks et al., 2004). In this study suspended students showed fewer and significantly less influential school contextual promotive factors that influenced engagement, especially bidirectional relationship factors. Research could determine the etiology of this finding as well as how discipline practices in general, whether strict or lenient, affect the three components of student engagement.

Often entire student populations are included in the measurement of a school's student engagement levels; sometimes random samples are used. As a school rises or drops in engagement levels, it is important to be able to identify where the student levels are shifting. For example, when a school's scores rise, are the most at-risk populations responding to interventions or is it the students who were previously engaged that are demonstrating even higher levels? It is crucial to systematically monitor the engagement of students at-risk for school failure, for disengagement and for negative life trajectories such as those with mental health disorders, behavioural challenges and learning

disabilities.

In conclusion, research must continue. There is still much to learn about student engagement, about how to collect data on engagement and about how to use that data for school improvement. Providing students with support in developing relationship skills and teachers with training in how to build healthy, cohesive classrooms seems essential to those plans.

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APPENDICES

APPENDIX A

SCHOOL-WIDE CONTEXT SCALES

Safety

1. During the past 30 days on how many days did you feel unsafe at school or on the way home from school?
 - a. 0 days
 - b. 1 day
 - c. 2 or 3 days
 - d. 4 or 5 days
 - e. 6 or more days

Student Voice

1. How much do you agree with the following statement, “Students help decide what goes on in my school.”?
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly Agree

School Students’ Perception of Peer Social Climate

For the following questions, how many people your age do you think....

1. smoke cigarettes.
 2. drink beer, wine, or liquor.
 3. smoke marijuana (pot reefer, weed, blunts).
 4. use cocaine or other hard drugs.
 5. sniff glue, paint, gas, or other things you inhale to get high.
 6. have sexual intercourse.
 7. have experienced oral sex.
- a. None
 - b. Less than half
 - c. About half
 - d. More than half
 - e. All or almost all

APPENDIX B**CLASSROOM CONTEXT SCALES****Teacher Academic Support**

More about Life in the Classroom. In my class...

1. My teachers tell me how well I am doing.
2. If I don't understand something on my own, my teachers usually take time to help.
3. My teachers want me to do my best.
4. When I am having difficulty, the teachers usually know and give me help.
5. I feel able to ask my teachers when I don't understand something.
6. My teachers care about how much I learn.
7. Teachers take the time to explain what they want for assignments.
 - a. Strongly Disagree
 - b. Somewhat Disagree
 - c. Neither Agree nor Disagree
 - d. Agree Somewhat
 - e. Strongly Agree

Cohesion

More about Life in the Classroom. In my class...

1. I like to work with others in my class.
2. All the students in my class know each other.
3. In my classes, people are friendly.
4. My best friends are in this class.
 - a. Strongly Disagree
 - b. Somewhat Disagree
 - c. Neither Agree nor Disagree
 - d. Agree Somewhat
 - e. Strongly Agree

Alienation

More about Life in the Classroom. In my class...

1. I often get discouraged in school.
2. I am often lonely in class.
3. I am not doing as well in my classes as I would like to.
4. I get bored in my classes.
5. I have a lot of questions I never get a chance to ask in class.
6. I find it hard to speak my thoughts clearly in class.
7. I should get along with other students better in school than I do.
 - a. Strongly Disagree
 - b. Somewhat Disagree
 - c. Neither Agree nor Disagree
 - d. Agree Somewhat
 - e. Strongly Agree

APPENDIX C

PEER GROUP CONTEXT SCALES

Peer Emotional Support

More About Life in the Classroom. In my class...

1. Other students really care about me.
2. Other students like me as much as they like others.
3. Other students like me the way I am.
4. Other students think it is important to be my friend.
 - a. Strongly Disagree
 - b. Somewhat Disagree
 - c. Neither Agree nor Disagree
 - d. Agree Somewhat
 - e. Strongly Agree

Relational Victimization

Please Read each of the following statements and indicate how true each is for you, NOW and during the PAST 3 MONTHS.

1. I have a friend who excludes me from doing things with his/her friends when she/he is mad at me.
2. A friend of mine has gone “behind my back” and shared private information about me with other people.
3. I have intentionally ignored a person until they gave me my way about something.
4. I have been the target of rumours or gossip.
5. When a friend of mine has been mad at me, other people have “taken sides” with her/him and have been mad at me too.
 - a. Not true at all
 - b. Sometimes true
 - c. Very True

Dating Aggression

Please read each of the following statements and indicate how true each is for you, NOW and during the past 3MONTHS for anyone you have been “seeing”. Whenever you see the words “boyfriend or girlfriend”, we would like you to think of anyone you were going out with, seeing, hooking up with, or dating.

1. I cheated on my girlfriend/boyfriend because I was angry at him/her.
2. When my girlfriend/boyfriend made me mad, I flirted with another person in front of him/her.
3. I gave my girlfriend/boyfriend the silent treatment when he/she upset or angered me in some way.
4. I try to make my girlfriend/boyfriend jealous when I am mad at her/him.
5. I threatened to break up with my girlfriend/boyfriend to get her/him to do what I wanted.

APPENDIX D**AT-RISK SUBGROUP IDENTIFICATION SCALES****Suspension**

During the last school year, have you ever been suspended from school?

Yes

No

Academic Success

During the past 12 months, how would you describe your grades in school?

- a. Mostly 80's and higher
- b. Mostly 70's
- c. Mostly 60's
- d. Mostly 50's
- e. Mostly below 50

Scale of Violent Risk Behaviours

Please read each of the following statement and indicate the response that best applies to you

During the past 3 months, about how many times....

1. have you stayed out later than your parents said you should?
2. have you stayed out all night without permission?
3. were you questioned by the police about anything that they thought you did?
4. were you questioned by a commissioner, a teacher, or a principal about anything that they thought you did such as stealing, damaging property or anything else?
5. have you run away from home?
6. have you used or bought or tried to sell something you knew was stolen?
7. have you fought with someone to the point where they needed care for their injuries(for example, because they were bleeding, or had broken bones)?
8. have you been in a fight where you hit someone with something other than your hands (for example, a stick, club, knife, or rock)?
9. have you carried a knife for the purpose of defending yourself or using it in a fight?
10. have you carried a gun other than for hunting or target shooting?
11. have you carried any other weapon such as a stick or a club?
12. have you threatened someone in order to get their money or things?
13. have you sold any drugs?
14. have you bought, or gotten drugs from someone for your own use or from someone else?
15. have you attempted to touch the private parts of another person's body (while knowing that they would probably not want you to)?
16. have you tried to force someone to have sex with you?

17. have you taken a car, motorbike, or motorboat without permission?
18. have you set fire on purpose to a building, car, or something else not belonging to you?
 - a. Never
 - b. Once or Twice
 - c. 3 or 4 Times
 - d. 5 or more Times

APPENDIX E

PARTICIPANT INFORMATION LETTER



YOUTH INFORMATION LETTER

Study: A longitudinal evaluation of the 4th R: A school based resource.

Investigators: Dr. Sheila Carr-Stewart, University of Saskatchewan.
Shannon Dobko, University of Saskatchewan

As a student in Grade 9, you are invited to participate in a research project being conducted with the xxxxxxxx, xxxxxxxx, xxxxxxxx, xxxxxxxx, and xxxxxxxx School Divisions. The Board is piloting the 4th R, a school-based resource, with Grade 9 Health Class curriculum in 5 self-selected high schools. The 4th R is aimed at fostering positive choices and healthy relationships among youth. This program also aims to reduce problem behaviours such as violence, substance use, and high-risk sexual behaviour among adolescents.

We are inviting you to participate in the research aspect of this program, as described below. Approximately 450 Grade 9 students will be asked to participate in this study, which is a collaborative effort of the xxxxxxxx, xxxxxxxx, xxxxxxxx, xxxxxxxx and xxxxxxxx School Divisions, University of Saskatchewan, Research and Education for Solutions to Violence (RESOLVE), and xxxxxxxx Health District.

Program Description

We are inviting Grade 9 students to complete a survey, which takes approximately one class period to complete. If you agree to participate, you will be asked to complete the survey during health class. There will be questions about healthy and unhealthy choices you may be making about relationships, the use of drugs and/or alcohol, and sexual behaviour. In addition, you will be asked about your attitudes and beliefs, as well as your relationships with your parents. There will also be questions about feelings of distress and stressful life events that you might experience. Information about your experiences will be obtained in the following manner:

- The information described above will be collected from participating students twice during the upcoming school year (in October and January).
- In addition to survey information, we are collecting some observational data to learn more about strategies that students use in conflict situations.

Follow-Up

It is important that we follow-up students in our study, so we will ask you to repeat the survey at the end of Grade 11. If you were selected to do the role play activity, you will be asked to do another one at the Grade 11. We are including this follow-up because we want to know if the new 4th R school-based resource helps students make healthier choices down the road. You will be contacted by Shannon Dobko, 4th R Curriculum Project Manager, to arrange for follow-up. If you change schools, we will contact your parents directly or may ask the school to provide information regarding the school you have transferred to.

Privacy and Confidentiality

The information you give us is confidential and your survey responses will not be linked back to your name.

All questionnaires and will be coded with a number and kept in a locked room. Your name and address and the contact information your parents provide, which are necessary for us to keep contact with study participants, will be kept separate from the other information you provide. At the end of the project (August, 2008), all data will be destroyed. The information collected during this research may be used for educational purposes, disseminated at conferences, become part of a published report and be referenced in a doctoral dissertation. This information will only be reported in terms of group findings. NO information will be reported that would allow anyone to be identified individually.

Potential Risks Associated with Participation

It is possible you might be uncomfortable or embarrassed about answering personal questions on the survey. Even if your parent has signed the consent form allowing you to participate, your participation in the study is voluntary. You will not be required to answer any question or participate in any activity that makes you uncomfortable. You may refuse to participate, refuse to answer any questions, or withdraw from the study at any time with no effect on your academic status. You will also have access to counsellors on-site at your school.

Potential Benefits Associated with Participation

Dating and developing healthy relationships are topics that are interesting to many teens. We think that you will enjoy completing these surveys as they ask questions about topics that are important to teens. In addition, this research may provide significant social and scientific benefits through the knowledge that will be gained about healthy teen relationships.

This letter is yours to keep. Please sign the attached assent form, and return it and the parental consent form to your homeroom teacher. If you have any questions about this research, please feel free to contact:

Dr. Sheila Carr-Stewart
University of Saskatchewan and

Academic Coordinator,
Research and Education for Solutions to Violence (RESOLVE)
Phone: 966-7611.

or,

Shannon Dobko
University of Saskatchewan and
RESOLVE
Phone: 966-2255

If you have questions about the conduct of this study or your rights as a research subject, you may contact the Office of Research Services, 966-2084 at the University of Saskatchewan.

APPENDIX F

PARENT CONTENT AND STUDENT ASSENT FORMS



CONSENT FORM

Your child is invited to participate in a study entitled, “A longitudinal evaluation of the 4th R: A school based resource.” Please read this form carefully, and feel free to ask questions you might have.

What is this study about?

As a student in Grade 9, your child is invited to participate in a research project being conducted with the xxxxxxxx, xxxxxxxx, xxxxxxxx, xxxxxxxx, and xxxxxxxx School Divisions. The Boards are piloting the 4th R program, as a school-based resource, to support Grade 9 Health Class curriculum in 5 self-selected high schools. The 4th R program is aimed at fostering positive choices and healthy relationships among youth. This program also aims to reduce problem behaviours such as violence, substance use, and high-risk sexual behaviour among adolescents. We are inviting your child to participate in the research aspect of this program, as described below. Approximately 450 Grade 9 students will be asked to participate in this study, which is a collaborative effort of the xxxxxxxx, xxxxxxxx, xxxxxxxx, xxxxxxxx and xxxxxxxx School Divisions, University of Saskatchewan, Research and Education for Solutions to Violence (RESOLVE), and xxxxxxxx Health District.

Potential Risks:

The classroom methods, measurement instruments, and research procedures have been piloted in London, Ontario schools for three years and previous ethics approval was obtained through the University of Western Ontario for this pilot phase in Ontario schools. As a participant in this research, if your child feels uncomfortable answering some of the personal questions, counsellors will be on-site at each participating school. Students may receive support from a counsellor by placing their name in a specified location in the school office, by informing a trusted teacher they wish to see a counsellor or my contacting the school counsellor directly. There are two potential benefits associated with individual’s participation in this project:

- a) New knowledge and skills pertaining to healthy relationships, problem-solving of interpersonal conflict situations, safe sexual practices, and substance use. Additional benefits may be derived from reduced need for counselling and health-related services.
- b) This research may provide benefits through the knowledge that will be gained about healthy teen relationships including behavioural, cognitive, and emotional engagement with their respective schools.

There are, however, no *known* benefits to the participants as a direct result of the research study.

Confidentiality

All data materials are completed online and are identified only by a unique numeric identification number. Surveys are subject to examination only by the researchers. When completing the on-line surveys, students will be assigned a one-time only login and password to access the web-based survey. Students will also be assigned a unique numeric identification number. This numeric identification number will serve to match surveys for the pre-and post-tests. No names will be associated with any data, or used in any report. A master list of student names and identification numbers will be generated and maintained by the researchers and cannot be accessed by anyone else. This information will be kept separate from all other data and will be destroyed once the need for it is passed. Names of students are necessary to maintain contact with students for data collected at follow-up (Grade 11). The parent survey is a telephone survey.

The level of security involves locked file cabinets, contained in a locked office (for paper files such as consent forms and for the master list of names and subject numbers). Files are accessible only to research staff. Computer access is by password only; computers are kept in locked offices. Backup copies of data are maintained by the researchers and contained in a locked file drawer in a locked office. All data will be stored for a minimum of 5 years after the study is completed.

Right to Withdraw:

As a participant, your child may refuse to answer individual questions and is free to withdraw from the study at any time. This withdrawal will not affect academic status, and/or access to, or continuation of, services provided by public agencies such as the University, hospitals, social services, schools, etc. If you choose to withdraw, your child's data will be deleted from the study and destroyed, if possible. If you decide to not participate in the research or to withdraw from the research this does not change the fact that your child will still receive the intervention program (which has been adopted at the school level).

Although the data from this study will be published and presented at conferences, the data will be reported in aggregate form, so that it will not be possible to identify individuals. Moreover, the consent forms will be stored separately from the materials used, so that it will not be possible to associate a name with any given set of responses. Ask your child not put a name or other identifying information on the materials used.

The data from this study will be published and presented at conferences; however, your identity will be kept confidential. Although we will report direct quotations from the interview, you will be given a pseudonym, and all identifying information (list relevant possibilities such as the name of the institution, the participant's position etc.) will be removed from our report.

As the study extends over a significant length of time, the researcher will advise participants of any new information that could have a bearing on their decision to participate.

Questions:

If you have any questions concerning the study, please feel free to ask at any point, you are also free to contact the researchers at the numbers provided above if you

have questions at a later time.

Consent to Participate:

I have read and understood the description provided above; I have been provided with an opportunity to ask questions and my questions have been answered satisfactorily. I consent to my child's participation in the study described above, understanding that I may withdraw this consent at any time. A copy of this consent form has been given to me for my records.

Feedback on Results:

We are happy to share the results with you. Debriefing and feedback procedures are as follows:

- 1) Counsellors will be on-site during the administration of the student self-report survey questionnaire to debriefing with students as required in the schools.
- 2) An executive summary of research findings will be generated and provided to schools upon completion of the study. Written summaries will be available to parents and participants upon request. Finally, participants will be alerted to the availability of the dissertation once completed.

Ethics Approval

This study has been approved by the Behavioural Research Ethics Board at the University of Saskatchewan on _____. Any questions can be directed to the researchers or to the Office of Research Services, 966-2084.

Researcher(s):

Dr. Sheila Carr-Stewart
Professor Educational Administration, University of Saskatchewan
and
Academic Co-ordinator,
Research and Education for Solutions to Violence (RESOLVE)
Phone: 966-7611

Shannon Dobko
Ph.D Candidate in Educational Administration, University of Saskatchewan and
4th R Manager, RESOLVE
Phone: 966-255

We agree to participate in the study as outlined above. Either student or parent can withdraw from the study at any time without giving reasons and without any consequences.

(Signature of Parent)

(Date)

(Signature of Student)

(Date)

(Signature of Researcher)

(Date)



STUDENT ASSENT FORM

Study: A longitudinal evaluation of the 4th R: A school based resource.

Investigators: Dr. Sheila Carr-Stewart, University of Saskatchewan.
Shannon Dobko, University of Saskatchewan

As a student in Grade 9, you are invited to participate in a research project being conducted with the xxxxxxxxxx, xxxxxxxx, xxxxxxxx, xxxxxxxx, and xxxxxxxx School Divisions). The Board is piloting the 4th R, a school-based resource, with Grade 9 Health Class curriculum in 5 self-selected high schools. The 4th R is aimed at fostering positive choices and healthy relationships among youth. This program also aims to reduce problem behaviours such as violence, substance use, and high-risk sexual behaviour among adolescents.

We are seeking your agreement to participate in the research aspect of this program, as described below. Approximately 450 Grade 9 students will be asked to participate in this study, which is a collaborative effort of the xxxxxxxx, xxxxxxxx, xxxxxxxx, xxxxxxxx and xxxxxxxx Divisions, University of Saskatchewan, Research and Education for Solutions to Violence (RESOLVE), and xxxxxxxx.

Program Description

We are asking Grade 9 students to complete a survey, which takes approximately one class period to complete. If you agree to participate, you will be asked to complete the survey during health class. There will be questions about healthy and unhealthy choices you may be making about relationships, the use of drugs and/or alcohol, and sexual behaviour. In addition, you will be asked about your attitudes and beliefs, as well as your relationships with your parents. There will also be questions about feelings of distress and stressful life events that you might experience. Information about your experiences will be obtained in the following manner:

- The information described above will be collected from participating students twice during the upcoming school year (in October and January).
- In addition to survey information, we are collecting some observational data to learn more about strategies that students use in conflict situations.

Follow-Up

It is important that we follow-up students in our study, so we will ask you to repeat the survey at the end of Grade 11. If you were selected to do the role play activity, you will be asked to do another one at the Grade 11. We are including this follow-up because we

want to know if the new 4th R school-based resource helps students make healthier choices down the road. You will be contacted through your school to arrange for follow-up. If you change schools we will contact your parents directly or may ask the school to provide information regarding the school you have transferred to.

Privacy and Confidentiality

The information you give us is confidential, and this confidentiality will be protected to the extent permitted by law. If you tell one of the researchers about a child being hurt, or that you intend to hurt yourself or someone else, we are required to contact the proper authorities. Your survey responses will not be linked back to your name.

All questionnaires and will be coded with a number and kept in a locked room. Your name and address and the contact information your parents provide, which are necessary for us to keep contact with study participants, will be kept separate from the other information you provide. At the end of the project (August, 2008) we will shred any papers with your name on it. The information collected during this research may be used for educational purposes, become part of a published report and be referenced in a doctoral dissertation. This information will only be reported in terms of group findings. NO information will be reported that would allow anyone to be identified individually.

Potential Risks Associated with Participation

It is possible you might be uncomfortable or embarrassed about answering personal questions on the survey. Even if your parent has signed the consent form allowing you to participate, your participation in the study is voluntary. You will not be required to answer any question or participate in any activity that makes you uncomfortable. You may refuse to participate, refuse to answer any questions, or withdraw from the study at any time with no effect on your academic status. You will also have access to counsellors on-site at your school. You may receive support from a counsellor by placing your name in a specified location in the school office; by informing a trusted teacher, you wish to see a counsellor, or my contacting the school counsellor directly.

Potential Benefits Associated with Participation

Dating and developing healthy relationships are topics that are interesting to many teens. We think that you will enjoy completing these surveys as they ask questions about topics that are important to teens. In addition, this research may provide significant social and scientific benefits through the knowledge that will be gained about healthy teen relationships.

This letter is yours to keep. Please sign the attached assent form, and return it and the parental consent form to your homeroom teacher. If you have any questions about this research, please feel free to contact:

Dr. Sheila Carr-Stewart
University of Saskatchewan and
Academic Coordinator,
Research and Education for Solutions to Violence (RESOLVE)

Phone: 966-7611.

or,

Shannon Dobko
University of Saskatchewan and
RESOLVE
Phone: 966-2255

If you have questions about the conduct of this study or your rights as a research subject you may contact the Office of Research Services, 966-2084 at the University of Saskatchewan.



STUDENT ASSENT FORM

“A longitudinal evaluation of the 4th R: A school based resource.”

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction.

Name (please print)

Signature

Date

Principal investigator:
Dr. Sheila Carr-Stewart, Professor,
Department of Educational Administration
University of Saskatchewan
306-966-7611

Co-researcher:
Shannon Dobko,
4th R Project Manager
RESOLVE and the University of Saskatchewan
306-966-2255

APPENDIX G

**LETTER TO BOARDS OF EDUCATION:
REQUEST TO CONDUCT RESEARCH**



REQUEST TO CONDUCT RESEARCH

Dr. Sheila Carr-Stewart, Professor,
Department of Educational Administration
28 Campus Drive
University of Saskatchewan,
Saskatoon, SK Canada
S7N 0X1

May 30, 2005

Dear Director:

Please accept this letter as request for permission to conduct research in the _____ School Division. This research is aimed at measuring the impact of The 4th R, a new school-based resource designed to augment Grade 9 Health program; the 4th R has been aligned with this curriculum. The 4th R is aimed at fostering positive choices and healthy relationships among youth by teaching strategies that reduce problem behaviours such as violence, substance use, and high-risk sexual behaviour among adolescents.

The pilot program is scheduled to begin September 2005, within 5 high schools self-selected from the XXXXXX school divisions. These 5 school divisions originally became involved in the project by invitation from Shannon Dobko, co-researcher and 4th R Project Manager. The timeframe for the study is three years; commencing September 2005 and culminating in August of 2008.

A crucial component of this project involves data collection from students, parents and teachers in order to evaluate the impact of this comprehensive, school-based intervention that is designed to promote healthy relationships and prevent the triad of adolescent risk behaviours (violence, substance abuse, high-risk sexual behaviour). The pilot project includes the use of on-line surveys relating to healthy and unhealthy choices students may make in their relationships including the use of drugs and/or alcohol, and sexual behaviour. In addition, students will be asked about their attitudes, beliefs and relationships with parents. Students will be asked questions about feelings of distress and stressful life events that they sometimes experience. Secondary aims of the study include

higher levels of behavioural and emotional engagement of students with their respective schools, work involvement, participation, persistence, student-teacher relations, student work orientation, and their orientation toward school.

Data analysis of the surveys will occur off site and results will be reported in aggregate form; results will be combined and not be reported by school or by school division. Every effort will be taken to ensure confidentiality and anonymity of participants. Participation is strictly voluntary and students may withdraw from the research component at any time without any consequences.

Feedback on Results

We are happy to share the results with you. Debriefing and feedback procedures are as follows:

The data from this study will be published and presented at conferences and used for a dissertation. An executive summary of research findings will be generated and provided to schools upon completion of the study. Written summaries will be available to parents and participants upon request. Finally, participants will be alerted to the availability of the dissertation once completed.

If you have any questions about this survey or the research study, please do not hesitate to contact Dr. Sheila Carr-Stewart at 966-7611 or Shannon Dobko at 966-2255. If you prefer to respond in writing, our mailing address is Department of Educational Administration, 28 Campus Drive, University of Saskatchewan, Saskatoon, SK, S7N 0X1. Thank-you for your time, consideration, and support of this research project. We look forward to your participation!

Sincerely,

Dr. Sheila Carr-Stewart
Professor in Educational Administration, University of Saskatchewan and
Academic Coordinator, Research and Education for Solutions to Violence (RESOLVE)
Phone: 966-7611

Shannon Dobko
University of Saskatchewan and
4th R Curriculum Project Manager (RESOLVE)
Phone: 966-2255

APPENDIX H

INSTRUCTIONS FOR STUDENTS

WHEN STUDENTS ARRIVE AT THE COMPUTER LAB

DIRECTIONS TO READ TO STUDENTS: Pre-Survey

A few weeks ago, you were given a consent form to sign that would allow you to participate in a health survey. Today you are here to complete the survey. It is basically a number of questions asking you about your health behaviours and attitudes. It asks about things like sex, drugs, alcohol, violence, friendships and dating.

You have the whole period to finish the survey. You should get started quickly, but really take your time reading the questions, and thinking about the questions. Read the instructions for each section and each question carefully. It is important to read each question carefully, because some of the questions ask about how you have been feeling during a certain time. For example, some of the questions ask about things that may have happened, or how you may have felt during the PAST 3 MONTHS. So, when you think of the last 3 months, think about the time around when you finished grade 8, through the summer, and up until now. Think about what each question is asking you, and how you feel about each question.

It is **REALLY** important that your answers are honest – we want them to reflect how you ACTUALLY FEEL, your true attitudes and behaviour – not how you think we want you to answer.

Remember, all your answers are PRIVATE. Your names are not on the surveys, and no parents or teachers will have access to your answers. So, you can be 100% truthful with your responses. When you finish the survey, it will go into a computer database which the researchers will look at as a large group. There are hundreds of students doing these surveys, so no one will be singled out as an individual. We really want to stress how important it is that you answer HONESTLY and on your own, without the help or influence of any of your friends or classmates.

Doing this survey has NOTHING to do with your marks in health class. It is important that you answer as many of the questions as possible. We appreciate you doing the survey, and helping us out, but if you don't feel comfortable about answering a question, you can leave it blank. We don't want you to answer a question that you feel uncomfortable about answering.

If you have a question during the survey, please put up your hand and one of us will try to answer your question. You should ask us, not the teacher. Treat this survey like you would a test. That means you do not talk to the person next to you, and you should always keep your eyes on YOUR computer, do not look at the computer next to you.

To get started, please type in your ID number and PIN number that are on the sheet in front of you. Next, follow the on-line prompts to guide you through the survey.

When you finish, a message will appear on the computer with further instructions.

DEBRIEFING

I would like to take a few moments to THANK YOU for doing this survey. We really appreciate that you answered the questions, and gave us your time and attention today. I know some of the questions were personal, and sensitive, so thank you for answering honestly. If you are upset, or thinking about any of the questions we asked, or have any questions about the issues brought up today and you want someone to talk to about them, a guidance counsellor is a really good person to go to. Also, we are handing out some stickers with phone numbers on them. Take a look at them, and keep the stickers somewhere handy. You might not have to personally call any of these places, but maybe you have a friend that could use a number

Again, thanks a lot! And I hope you have a great year!

WHEN STUDENTS ARRIVE AT THE COMPUTER LAB

DIRECTIONS TO READ TO STUDENTS: Post-Survey

Good Morning/Afternoon

You probably remember us from a couple of months ago... We came into your class and did an online survey with you. It asked about things such as sex, drugs, alcohol, dating relationships, and family relationships. Well, we are back today, to do some follow-up questions with you. The guidelines are the same as last time.

- All answers are PRIVATE AND CONFIDENTIAL
- Your parents & teachers will NOT find out how you answered
- Treat this like a test – don't talk to the person beside you
- If you have any questions ask us, not your teacher
- You have the whole period to finish the survey

You should get started quickly, but really take your time reading and thinking about the questions.

Remember to read the instructions of each section and each question carefully, because some of the questions ask about how you have been feeling during a certain time. For example, some of the questions ask about things that may have happened, or how you may have felt during the PAST 3 MONTHS. So, when you think of the last 3 months, think about the time just after you started grade 9, in October, up until now. **Some of the questions may be similar to the ones you answered for us before but they are different because the TIME PERIOD has changed. It is important that you answer all the questions – even if you think you already answered it in the past!**

It is REALLY important that your answers are honest- we want your answers to reflect how you ACTUALLY FEEL, your true attitudes and behaviour- not how you think we want you to answer. You can answer all questions honestly because your answers are private and confidential – your teachers, parents, or friends will NOT know how you answered! The information you provide will go into a computer database and it will be combined with similar information from hundreds of other students. Your name will not be linked with the data you provide on the survey.

Again, doing this survey has NOTHING to do with your marks in health class. It is important that you answer as many of the questions as possible. We appreciate you doing the survey, and helping us out, but if you don't feel comfortable about answering a question, you can leave it blank. We don't want you to answer a question that you feel uncomfortable about answering.

Also, although there is the opportunity in this survey to answer questions that may be troubling to you (abuse, alcohol problems, suicide), reporting something like this in this

survey is not going to get you the help you need because, as we have stressed, this survey is anonymous. However, we really encourage you to PLEASE talk to a teacher, guidance counselor, or parent about anything that is bothering you or any problem you are having. They can help you and they want to help you.

To get started, please type in your ID number and PIN number that are on the sheet in front of you. The survey will prompt you through each page. You cannot press the 'back' button once you leave a page, so make sure that the answer you type in is true for you!

When you finish, a message will appear on the computer with further instructions.

DEBRIEFING

I would like to take a few moments to THANK YOU for doing this survey. We really appreciate that you answered the questions and gave us your time and attention today. I know some of the questions were personal, and sensitive, so thank you for answering honestly. Just because we asked you these questions, it does not mean we think you are participating in these behaviours. We ask everybody all the same questions, and we know that a lot of these questions may not even apply to you. However, these are issues that do affect many teens. That is why we ask about them. If you are upset, or thinking about any of the questions we asked, or have any questions about the issues brought up today and you want to talk to someone about them, a guidance counselor is a really good person to go to. You could also speak to a teacher, a parent, or a close friend. Please consult the community resource stickers that you received from us the last times we were out to do the survey. These stickers have the names and numbers of community agencies that will be able to help you with a variety of issues.

Again, thanks a lot! You were awesome, and we hope you have a great year!

Fourth R School-based Resource**Instructions to Read to School Students When Handing out Consent Forms**

I want to talk to you about a survey you are going to be doing in your health class in a few weeks. All grade nine health classes in your school will be participating in this survey. It is **expected** that **all students will participate** unless your parents have a concern or objection. The survey will be completed during health class on one day this month. I think you will really enjoy doing the survey because it asks about all kinds of things that you think about, and that you and your friends are talking about. It asks about things like sex, drugs and alcohol, violence, harassment, friend and dating relationships, and family relationships.

We are researchers at the University of Saskatchewan, and we are doing this study because we want to learn more about these topics. **You are the experts on these topics and we want to hear your thoughts.** There is **no other way** we can learn about how you feel about these things besides asking **you**. Your opinions and answers on this questionnaire are going to help us design better health education for students in the future. We want to make health education fun and useful for student and we know we can't do that by having a bunch of adults sitting around in a room trying to imagine what you might be going through and how you feel about things.

You will complete an on-line survey on the computer during health class. Your answers will be **private and confidential**. You will NOT have to put your name on the survey. The only people who will ever see your answers are the researchers, and they **don't even know you**. Your answers will not be tracked back to you, so you don't have to worry about your parents, teachers, or other students finding out about the information you provide. Finally, the researchers are going to examine your answers as a large group (over 450 students, in five school divisions – Saskatoon West, Saskatoon East, Saskatoon Valley, Saskatoon Catholic, Saskatoon Public school divisions- are doing the survey), not on an individual basis.

Please take this form home tonight, sign it, have your parents sign it, and bring it back by _____. If your parents do not want you to complete this survey have them write 'NO' across the page and sign it anyway. You must return the form regardless of whether or not your parents want you to complete the survey.

When you bring your form back make sure to fill out the ballot before handing the form in to your teacher. Your teacher will put the ballot into a draw for some movie tickets, as long as your parents have signed the form.

Here is what you can get if you are the class with the most forms returned in the whole school: A PIZZA PARTY!

If at least 80% of the class returns the forms, we will treat the entire class to some healthy snacks. Does anyone have any questions?

Appendix I: Ethics Approval



**UNIVERSITY OF SASKATCHEWAN
Behavioural Research Ethics Board (Beh-REB)**

NAME: Sheila Carr-Stewart, Educational Administration
Shannon Dobko

Beh 05-121

DATE: 26-Aug-2005

The Behavioural Research Ethics Board (Beh-REB) has reviewed the Application for Ethics Approval for your study "A Longitudinal Evaluation of the 4th R: A School Based Resource" (Beh 05-121).

1. Your study has been APPROVED.
2. Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Committee consideration in advance of its implementation.
3. The term of this approval is for 5 years.
4. This approval is valid for one year. A status report form must be submitted annually to the Chair of the Committee in order to extend approval. This certificate will automatically be invalidated if a status report form is not received within one month of the anniversary date. Please refer to the website for further instructions <http://www.usask.ca/research/behavrsc.shtml>

I wish you a successful and informative study.

Dr. Valerie Thompson (Chair)
Behavioural Research Ethics Board (Beh-REB)