Suicidal Youth in America: The Role of School Disengagement and Other Sociodemographic Factors

by

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ABSTRACT

SUICIDAL YOUTH IN AMERICA: THE ROLE OF SCHOOL DISENGAGEMENT AND OTHER SOCIODEMOGRAPHIC FACTORS

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This thesis explores the nature of the relationship between school disengagement and suicide ideation among American youth aged 12-17. Situated within Ecological Systems Theory, this study regards suicide ideation as a consequence of the alienating nature of school practices at the microsystem level that have been ultimately guided by capitalist ideologies at the macrosystem level. Using data from the 2011 National Survey on Drug Use and Health, logistic regression analysis is employed whereby suicide ideation is the dependent variable. This cross-sectional study controls for a wide range of sociodemographic factors and seeks to gain an understanding as to whether these factors mediate the relationship between school disengagement and suicide ideation. The results of this study indicate that, in the absence of controls, as youth become more disengaged from school, their likelihood of experiencing suicide ideation increases. However, this relationship becomes statistically insignificant when controlling for availability of emotional support from parents. Those who have a parent to talk to about serious problems are less likely to experience suicide ideation. Thus, these findings suggest that while there is a relationship between school disengagement and suicide ideation, it is mediated by parental support. This thesis arrives at the conclusion that school engagement and parental support have an interrelated effect on suicide ideation risk, and that this relationship should be further explored.
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CHAPTER ONE: INTRODUCTION

Over the past quarter-century, the topic of adolescent suicide has gained increased attention within social science research (Bridge, Goldstein, & Brent 2006). This research emphasizes the importance of understanding the various biological, psychological, and sociological correlates of suicidal behaviour in order to gain insight into the ways in which adolescent suicide can be prevented (Beautrais 2000; Evans, Hauton, & Rodham 2004; Gould, Greenberg, Velting, & Shaffer 2003; Pelkonen & Marttunen 2003; and Shaffer & Pfeffer 2001). Undoubtedly, the driving force behind the increased interest in this area is the alarming statistics on teen suicide. Suicide is the second-leading cause of death among Canadian youth (Statistics Canada 2012), and the third-leading cause of death among American youth (Centers for Disease Control and Prevention 2011). Worldwide, more than 90 000 adolescents reported suicides each year; an alarming statistic that does not even take into account the vast number of suicides that go unreported (Greydanus, Bacopoulou, & Tsalamanios 2009). However, the statistics on death by suicide only depict the tip of the iceberg in terms of comprehending the significance and prevalence of adolescent suicidality as a whole. Highlighting US data specifically, a 2011 survey of a nationally-representative sample of high school students revealed that 15.8% of students had seriously considered committing suicide during the twelve-month period preceding the survey (CDC 2011). The Centers for Disease Control (CDC) also estimates that for every completed suicide among American adolescents, there are approximately eleven suicide attempts (2011). Therefore, teen\(^1\) suicide, and suicidal behaviour more generally, has established itself as a statistically relevant issue worthy of contemporary scholarly attention.

\(^1\) It is important to note, here, that I use the terms “adolescent”, “youth”, and “teen” interchangeably to refer to the same age group. The age range of this group varies within the literature, but generally falls within the range of 12 to 18.
Unquestionably, the adolescent population is not the only demographic group that is vulnerable to suicidal behaviour. In both Canada and the United States, those aged 40 to 65 years comprise the group with the highest suicide rate (CDC 2011; Statistics Canada 2012). Elderly populations are cited as having the second highest rate in the US, and the third highest rate in Canada. Likewise, the statistics on adolescent suicide are often grouped with that of young adults. For example, the CDC uses the age range 15-24 as an age group when reporting suicide rates. By grouping adolescents with young adults, there is reason to believe that suicide rates are comparable between these two groups. Thus, the emphasis placed on adolescent suicide in this thesis is not an indication that adolescent suicide is more prevalent or more important than suicide among other age groups. Rather, as outlined in the next section, I focus on adolescent suicide because studying suicide among different age groups in isolation has particular research benefits; here, the focus happens to be on the period of adolescence.

However, it is important to examine suicide among the adolescent population in isolation from suicide among the other demographic groups. Several scholars have noted the distinct developmental, social, and emotional hardships unique to the period of adolescence. These distinct hardships, according to Smith, Calam, and Bolton (2009), are largely attributable to the major biological, psychological, and social changes characteristic of the period of adolescence. The consequences of these changes include, but are not limited to: an increased likelihood of developing depression (Aneshensel & Huba 1984; Beck 1972; Smith et al 2009); periods of turbulence and confusion (Harlow, Newcomb, & Bentler 1986); and alienation (Martin, Bengston, & Acock 1974; Wenz 1979). Adolescence is also noted as a period of striving to find direction and purpose in life (Cote 2013; Harlow, Newcomb, & Bentler 1986). It follows, then, that the ways in which suicidal thoughts and behaviours develop among the adolescent
population differs from that of other demographic groups, and will thus also require a different set of preventative measures than those required for the other groups. For example, unfulfilling relationships with parents and problems at school have been cited as major contributory factors to adolescent suicidality (Dukes and Lorch 1989). Relationships with parents change in nature throughout the life course, and school attendance is largely unique to the adolescent population. Thus, targeting parental relationships and schools for suicide prevention measures will likely prove ineffective for age groups other than adolescents; though if there is a delayed reaction, this research might be beneficial. Nonetheless, it is important to examine suicide in an age-specific context. For this thesis, I will be specifically exploring adolescent suicide.

While suicidal behaviour encompasses suicidal thoughts, plans, attempts, and completions, this thesis will focus exclusively on suicide ideation. Suicide ideation is broadly defined as an individual’s serious consideration to commit suicide (Pisani, Schmeelk-Cone, Gunzler, Petrova, & Goldston 2012; Schmeelk-Cone, Pisani, Petrova, & Wyman 2012). Generally speaking, 15-25% of adolescents experience suicide ideation at some point during their adolescent years (Grunbaum, Kann, Kinchen, Ross, Hawkins et al. 2004). Because suicide ideation logically precedes suicidal acts, it follows that suicide prevention strategies that work to prevent suicide ideation in the first place would be most effective (de Man & Leduc 1995). Likewise, the reduction of these negative thought processes among the adolescent population would be beneficial, regardless of whether or not a teen would have actually gone through with taking his or her life. The statistical relevancy and logic of targeting adolescent suicide ideation positions the latter as a topic worthy of exploration, and will therefore be the focus of this thesis.

In order to generate a better understanding of the ways in which adolescent suicide ideation can be prevented, it is imperative to explore its various correlates. A substantial amount
of research has been dedicated to uncovering the biological, psychological, and sociological correlates of teen suicide ideation. This thesis will focus exclusively on sociological and social-psychological correlates found within this literature. There is strong support in this literature for understanding and predicting suicide ideation in terms of the level of social integration and isolation a given individual experiences (King & Merchant 2008). More specifically, a large body of literature has been dedicated to understanding the impact that schooling, and the school experience in general, has on teen suicide ideation. In brief, school practices have been noted as being particularly relevant to adolescent identity construction (Davidson 1996). Likewise, schools are the major social institutions in which adolescents participate, making them accessible and stable sites in which to target suicide prevention strategies (Bond, Butler, Thomas, Carlin, Glover et al. 2007). In accordance with this emphasis on the importance of the schooling experience in the literature, this thesis will explore schooling-related correlates of adolescent suicide ideation.

The literature on school-related correlates of adolescent suicide ideation tends to be concentrated on four central themes. First, an extensive body of research has been dedicated to examining the relationship between school-related delinquency and suicide ideation. Several studies have found that student misconduct, as a whole, is associated with an increase in the prevalence of suicidal phenomena (Borowsky, Resnick, Ireland, & Blum 1999; Reinherz, Giaconia, Silverman, Friedman, Pakiz et al. 1995; and Vannatta 1996). More specifically, Bjarnason and Thorlindsson (1994) articulate the positive correlation between high school truancy and suicide ideation; and others have noted the positive correlation between bullying perpetration and suicide ideation (Hepburn, Azrael, Molnar, & Miller 2012; Kaltiala-Heino 1999). Accordingly, the second major theme found in the literature is student victimization. A
wealth of literature discusses the relationship between bullying victimization and suicide ideation (Hepburn et al. 2012; Kaltiala-Heino 1999; Klomek, Kleinman, Altschuler, Marrocco, Amakawa et al. 2011). It is also widely supported in the literature that sexual minority youth face an increased risk of suicide ideation due to victimization on the basis of sexual orientation (Balsam, Rothblum, and Beauchaine 2005; DiFulvio 2011; Klomek et al. 2013; Marshal, Dermody, Cheong, Burton, Friedman et al. 2011). Third, the association between educational performance and suicide ideation has been widely studied, with the general consensus that lower academic performance is associated with an increased risk of suicide ideation (Bjarnason & Thorlindsson 1994; Borowsky et al. 1999; Dubow & Kausch 1989; Grossman, Milligan, & Deyo 1991; Kaltiala-Heino 1999; Kandel, Raveis, & Davies 1991; Lewis, Johnson, Cohen, Garcia, & Valez 1988; Reinherz et al. 1995; Rey Gex, Narring, Ferron, & Michaud 1998; Rubenstein, Heeran, Housman, Rubin, Stechler 1989). The fourth theme concerns the relationship between students’ overall school experience and perception of the school climate, and suicide ideation. Many studies have revealed that having a negative attitude toward school in general increases the likelihood of developing suicide ideation (Borowsky et al. 1999; Dubow et al. 1989; Howard-Pitney 1992; Juon, Nam, Ensminger 1994; Kinkel 1989; Pisani et al. 2012; and Tomori 1999). Likewise, perceiving a lack of social support from teachers (Kaltiala-Heino 1999), and feeling a lack of connectedness to the school (Kaminski, Puddy, Hall, Cashman, Crosby et al. 2010) have also been found to increase a student’s likelihood of having suicide ideation. It can thus be seen from the above section that the existing sociological and social-psychological literature provides a solid foundation for understanding the ways in which school experiences are correlated with adolescent suicide ideation. However, this literature appears to
mostly ignore the ways in which a student’s level of school engagement is correlated with teen suicide ideation. This thesis will address this conceptual gap in the literature.

The Present Study

The present study will address the following research question: In what ways does school disengagement affect American adolescents’ likelihood of experiencing suicide ideation? I situate this study within Urie Bronfenbrenner's (1979) Ecological Systems Theory, which states that human behaviour is affected not only by individual characteristics and a person’s relations with their immediate surroundings (microsystem), but by cultural ideologies (macrosystem), broader societal policies and trends (exosystem) and the relationships between these varying levels of influence (mesosystem). More specifically, I posit that alienation, as a process of influence from the macrosystem down to the individual level, provides a compelling explanation for school disengagement and the resulting negative consequences. This study uses a quantitative research methodology; I seek to find if there is a statistically significant relationship between an adolescent’s level of school engagement and his or her likelihood of experiencing suicide ideation when going through a period of prolonged emotional distress and/or depression. The outcomes of this study will serve to support or refute school disengagement as a contributing factor to adolescent suicide ideation, and to support or refute the contributing factors that have already been established in the literature. These research findings will contribute to the literature that guides where adolescent suicide prevention and/or intervention efforts should be directed, or re-directed. Ultimately, the present study serves the greater purpose of contributing a piece in the puzzle of lessening the occurrence of adolescent suicide at large.
Chapter Overview

In Chapter Two, I will both discuss the theoretical framework adopted for this study and provide an extensive review of the literature on school disengagement and adolescent suicide ideation. First, I will discuss the Ecological Systems Perspective, which is the overarching theoretical framework of this thesis. Then, I will justify the importance of focusing on schools as a particularly important social setting during the period of adolescence. Given that several different conceptualizations of school engagement are used in the literature, I will present an overview of these definitions and point to the most widely accepted definition in order to provide clarity on what this term means, and how it is used. Next, I enter into a detailed discussion of how student disengagement develops, and use Karl Marx’s notion of alienation as the theoretical underpinning that explains this process. After discussing the wide range of negative consequences that result from student alienation, I make the connection between alienation and disengagement. The importance of student engagement is then discussed; I highlight the various negative outcomes that scholars have associated with disengagement, and identify the theoretical lenses adopted by these scholars when examining these relationships. I then focus on key studies that have explicitly examined the relationship between school disengagement and suicide ideation, and highlight the gaps in this literature. Finally, I discuss the most frequently cited sociodemographic variables that affect the likelihood of an adolescent experiencing suicide ideation, which sets the tone for Chapter Three.

Chapter Three will discuss in great detail the methodology used for the present study. First, I will provide a description of the source of data used for this thesis, the 2011 National Survey on Drug Use and Health (NSDUH). I then discuss the sample used in this study, and the careful selection process that was followed in order to arrive at this particular sample. Next, I
discuss the dependent variable, suicide ideation, and what exact measures were used to assign respondents a positive or negative response to this symptom. I then discuss the seven measures that comprise the school engagement scale used in this study, and the reliability of this scale. The control variables, and why they were included, are then discussed. Finally, I outline the method of analysis and explain the two models that will be used to examine the relationship between school engagement and suicide ideation in the present study.

In Chapter Four, I will begin by summarizing the descriptive results of the study sample, highlighting the demographic makeup of the sample, and how the respondents answered the survey questions that were included as variables in this study. I will then describe the results of the two logistic regression models used in this study. These two models assess the impact of school disengagement on suicide ideation with and without the use of sociodemographic control variables. I will draw particular attention to the statistically significant predictor variables of suicide ideation. I will discuss the strength and direction of each of these relationships, and provide graphs to convey this information visually. The data presented in this chapter establish the nature of the relationship between school disengagement and suicide ideation from a statistical standpoint that will then be interpreted and elaborated on in Chapter Five.

Finally, Chapter Five will situate the findings of the present study in the existing literature and theoretical frameworks outlined in Chapter Two. I will discuss the implications of this thesis research, and make policy recommendations. I will also provide an overview of any limitations that this study presents. I will then propose directions that future research on the topic of school engagement and adolescent suicide ideation should take moving forward.
Introduction

This chapter will include an extensive review of the literature that contributes to our understanding of the relationship between student disengagement and suicide ideation, along with the theoretical underpinnings of this relationship. I will discuss why schools are important social settings during the adolescent stage, and what it means to be “disengaged” from this setting. I then draw upon Karl Marx’s notion of alienation to provide insight into how students become disengaged, and what the different consequences are of this process. I will discuss why school disengagement is worthy of scholarly attention, and the current research that links it to suicide ideation. I finish by providing an overview of the most pertinent sociodemographic factors to consider when studying adolescent suicide ideation. First, however, I will begin with a discussion of the overarching theoretical framework for my analysis: Ecological Systems Theory.

Ecological Systems Theory

The relationship between school disengagement and adolescent suicide ideation is influenced by a wide range of factors, from personal characteristics to broader societal processes. Thus, taking into account this wide range of influencing factors, I find it useful to situate my analysis within Urie Bronfenbrenner's (1979) Ecological Systems Theory. This particular theory posits that human development is affected not only by the relations between the person and their immediate settings, but by the larger social contexts in which these settings are embedded as well (1979: 21). Bronfenbrenner (1979) proposes that there are four systems, each one embedded inside the next, that all individuals are situated within and influenced by the processes within and
among them. The macrosystem consists of the overarching ideologies and the organization of the social institutions within a particular culture or subculture (1979: 26). The exosystem is comprised of those social settings in which one may never actually enter (i.e. politics, industry, mass media), but in which events occur that affect a person's immediate social environment. The mesosystem consists of the relations between those social settings in which one does participate regularly (i.e. relations between school, family, and peer groups) (1979: 25). Finally, the microsystem is characterized by the activities, roles, and interpersonal relations that occur within one's immediate social settings (1979: 22). Figure 1 provides a visual representation of these systems.

**FIGURE 1. Ecological Systems Theory**
Individuals from the same social group (for example, American adolescents) tend to have similar micro-, meso-, and exosystem makeups. Bronfenbrenner (1979) notes that by comparing the systemic makeups of different social groups it becomes possible to identify the particular social processes that lead to between-group differences. This particular notion provides the theoretical backdrop for the selection of the control variables used in this analysis. There are particular facets of the micro-, meso-, and exosystems that are pivotal to the period of adolescence, while not as important to other demographic groups (i.e. the elderly). Most notably, the school is a fundamental social setting within an adolescent's microsystem, but has arguably little significance in the microsystems of most other demographic groups. In light of these systemic differences, Ecological Systems Theory works to both guide and support the exploration of suicide ideation among adolescents in isolation of other age groups.

**Schooling as the Center of Analysis**

Schooling is an essential social context for adolescent development (Baker 1998; Rutter & Meghan 2002). At a basic level, the importance of schooling in adolescence is made clear through the amount of time spent in this environment. In the United States, adolescents spend approximately half of their waking hours at school (Smith, Boutte, Zigler, & Finn-Stevenson 2004). But it is what happens during those hours that is of particular importance. A number of scholars have identified schooling as a secondary socialization agent to the family (Durkheim 1956; Gottfredson 2001; Hirschi 1969). Schools are settings in which broader societal norms, values, and mores are reinforced (Durkheim 1956; Hirschi 1969).

Drawing on Ecological Systems Theory, schools, as part of the adolescent microsystem, are shaped by the ideologies at the macrosystem level. Essentially, schools work to reproduce broader means of social organization. It is important to note that while this socialization process
serves a greater functional purpose to society, it is not entirely positive. Dorothy Smith (2000) asserts that schools reproduce systems of inequality that are found at the macrosystem level. This is evident, for example, in the ways that public and private schools are segregated, and how class, race, and gender are used as ways of grouping students, either explicitly or through hidden curriculum. As discussed in further detail later, schools adopt capitalist ideologies from the macrosystem, which can lead to a number of negative outcomes for students, including alienation from the learning experience. Nonetheless, the process of socialization within the school environment teaches adolescents about socially acceptable behaviour, and gives students a sense of what it means to be a part of a collectivity (Smith 2000). Adolescents are given opportunities to develop attachments to prosocial others, and to commit to common societal goals (Gottfredson 2001).

The importance of the schooling experience is supported not only theoretically, but statistically as well. When examining students with problem behaviour, Hirschi (1969) posits that the school is one of the most important agents of socialization to consider in understanding behavioural variability among students. Evidence from studies using multi-level modeling suggests that school-level variability accounts for 8-15% of the variance in student behaviour (Gottfredson 2001; Reynolds & Cuttance 1992). Likewise, it has also been found that, after controlling for individual-level variables including age, sex, and socioeconomic status, school-level variables explained up to 11% of the variance in problem behaviour (Gottfredson 2001). While these studies examine problem behaviour exclusively, we are able to appreciate the independent and statistically significant effect of the schooling experience on personal outcomes.

It follows, then, that disengagement from this important social context would have a negative impact on adolescents. Accordingly, an extensive body of research has examined the
relationship between school disengagement and a variety of negative outcomes, which will be discussed later. However, disengagement from the school setting has been conceptualized in a number of ways; several different definitions and ways of measuring this concept are evident in the literature. Thus, the next section will outline these varying definitions and draw attention to the most widely-accepted conceptualization, which has heavily influenced the way disengagement is both defined and measured in this thesis.

**Defining School/Student Engagement**

“School engagement” and “student engagement” are terms used throughout the literature to denote the same concept. Appleton, Christenson, Kim, and Reschly (2008) assert that the term "student engagement" is preferable, as the schools are responsible for engaging the students, who are then engaged to varying degrees. In contrast, Fredericks, Blumenfeld, and Paris (2004) maintain that the educational context is of utmost importance and therefore employ the term "school engagement". Regardless of the precise terminology, research on this topic collectively aims to gain an understanding of how students, situated within the school context, are engaged in a number of different activities and processes. Some scholars discuss this concept in terms of its positive form (engagement), while others express in terms of its negative form (disengagement). Thus, I will use the terms “student (dis)engagement” and “school (dis)engagement” interchangeably throughout this thesis, guided in part by the terminology specific authors employ.

Like these discrepancies in terminology, scholars also differ in terms of their conceptualizations of what constitutes the opposite, or the antithesis, of school engagement. Some scholars contrast engagement with disaffection (Connell & Wellborn 1991; Skinner &
Belmont 1993), whereas others simply infer that the negative outcome is the loss of engagement itself (Appleton et al. 2008).

The ways in which school engagement is defined in the literature vary considerably. For example, Conchas (2001) conceptualizes school engagement as academic success and staying in school, whereas Furrer and Skinner (2003) point to effort, attention, persistence, and an emotional attachment to the school as key indicators of engagement. However, despite these varying definitions, there is consensus that student engagement is a multidimensional construct. Appleton et al (2008), in their examination of the conceptual and methodological issues of school engagement in the literature, identify common dimensions used. They posit that engagement typically involves two or three components: almost always a behavioural component, and then an emotional or affective component, with an academic or cognitive component emerging, albeit far less frequently, in more recent literature (ex. Fredericks et al. 2004; Jimerson, Campos, & Greif 2003). These central components help bind together different conceptualizations of school engagement despite its wide range of broader definitions.

Recognizing the multidimensionality of student engagement is of particular importance. First, using one sweeping definition of engagement makes determining the source of disengagement almost impossible. Doing so fails to take into account the considerable body of research that examines how students behave, feel, and think in the school context, and how different processes lead to different outcomes (Fredericks et al. 2004). Accordingly, Appleton et al. (2008) add that recognizing the multidimensionality of engagement is crucial, not only for advancing the use of this construct, but for improving the social, emotional, and academic outcomes of all students.
Fredericks et al.’s (2004) three-part conceptualization of school engagement has been the focus of most theoretical and empirical studies on this topic (Hirschfield & Gasper 2011). Contemporary research on school disengagement tends to either explicitly use Fredericks et al.’s conceptualization, or tap into one or more of its components. In brief, Fredericks et al. conceptualize school engagement in terms of three dimensions: behavioural engagement, emotional engagement, and cognitive engagement. Behavioural engagement is conceptualized as participation in academic, social, and extracurricular activities. Emotional engagement targets the positive and negative relations students have with their teachers, classmates, schoolwork, and the school experience in general. Finally, cognitive engagement involves an investment in the learning process: being thoughtful, and willing to comprehend ideas and master new skills (2004: 60). The majority of the definitions of school engagement elsewhere in the literature either explicitly use Fredericks et al.’s three-part conceptualization of school engagement, or their breakdown of school/student engagement happens to fit into one or more of these three dimensions. Appleton et al. (2008) note that almost every definition includes a behavioural component, and many contain emotional or psychological components. A summary of the definitions used in the literature on school engagement, and how they fit into Fredericks et al.’s conceptualization is provided in Appendix A.

**Antecedents of Disengagement: Alienation**

Having established an overarching, generally accepted conceptualization of school engagement, it is important to understand how students become disengaged. This will serve as the first step in determining how to alleviate the problem of disengagement. Accordingly, here, I use Karl Marx’s notion of alienation in order to understand the ways in which students become disengaged. Situating this within Ecological Systems Theory, capitalist ideologies at the
macrosystem level influence processes within the exosystem, namely, industry and the division of labour. As will be discussed in the next section in further detail, these processes at the exosystem level ultimately impact the functioning of social settings within the microsystem, namely, schools. Thus, the alienation one experiences as a result of this process is the antecedent for disengagement from school. The next section will first provide an overview of Karl Marx and other theorists’ work on alienation, followed by a discussion of both the context-specific nature and multidimensionality of alienation. I will then examine student alienation specifically, discussing both the contributors to and consequences of this form of alienation.

Theories of Alienation

Rinehart (2006) effectively summarizes Karl Marx’s work on economic alienation as originally documented in Marx’s *Economic and Philosophical Manuscripts of 1844*. In brief, two main characteristics of capitalist labour markets are the source of worker alienation: the ownership of the means of production lying in the hands of a select, elite group of individuals; and the division of labour. Because the means of production are owned by a select few, most individuals come to rely on these powerful elites for work. As a result, individuals come to view themselves as simply commodities to be bought or rented by employers, losing their sense of identity and becoming alienated from themselves. Likewise, because employment is a commodity in high demand, individuals compete with one another for these opportunities. This capitalist ideology of individualism thus works to alienate individuals from one another as well. In terms of the work itself, employees are alienated from both the process of production and the product of their efforts. Because workers must carry out their work according to a set of rules and standards dictated by their employers and of over which they have no control, workers have to operate according to the motivations of others instead of their own motivations. Thus, the
work process itself becomes alien to the worker. Because the employers own the final product of this work, and dictate the use of this product, workers are unable to wholly understand and be able to appreciate the fruits of their labour. Thus, workers are alienated from themselves, others, their work, and the products of their work.

Marx suggests that the alienating nature of the capitalist economy then sets the stage for both religious and political alienation (Israel 1971). While employers exert control over commodities, political leaders exert control over geographic regions and governing laws. Power is attributed to these political leaders, leaving the every day, “lay” individual with the sense that power is “alien” to them (1971: 33). Likewise, Marx asserts that the misery and powerlessness that individuals experience motivates attachment to religion; religion is thought to serve as the “opium of the people.” However, Marx points out that religious individuals ascribe their best qualities as the work of a god-like being. They therefore alienate themselves from these admirable qualities, understanding them not as a reflection of their own thoughts and efforts, but of the external influence of this god-like being. Marx asserts that this way of thinking is a reflection of the powerless mindset that individuals have come to adopt as a result of the existing economic structure (1971). Thus, Marx illustrates the impact that capitalist ideologies at the macrosystem level have on elements of the exosystem, and ultimately on the individual.

While Marx’s theory is particularly prominent in the literature on alienation, other scholars have put forth slightly different ways of conceptualizing alienation. For example, Peter Berger adopts a phenomenological approach, asserting that as individuals internalize socially prescribed roles, they forget that the world they live in – their sense of reality – has been socially constructed by humans themselves; the result is a perceived loss of control over one’s social world, or, alienation (Berger & Pullberg 1965).
Alternatively, Erich Fromm adopts elements of Marxian theory and integrates psychoanalysis into his conceptualization of alienation. In brief, Fromm asserts that there are five basic social needs common to all human beings, including: the establishment of social relations with others; the need to be actively creative; the need for fixed roots (security); the need for one’s own identity; and the need to be oriented (to analyze the world in which one lives) (Israel 1971: 159). Fromm asserts that as societies develop, there becomes less need for their members to focus on survival, and as particular issues are essentially solved, new ones surface because society shifts its focus to new elements of human existence. As individuals become aware of these new issues, they enter a state of disequilibrium, and are in constant struggle to meet their five basic needs (1971). Certain environments cause individuals to try to meet those needs in socially unacceptable ways. According to Fromm, it is when individuals use unacceptable means to meet their basic needs that they are in a state of alienation. By engaging in a particular relationship or behaviour for the sole purpose of meeting a basic need, the relationship or behaviour becomes simply an instrument, or a means to an end. This inevitably makes the relationship, organization, process, behaviour, etc. “alien” to the individual (Fromm 1941).

In addition to Peter Berger’s and Erich Fromm’s theories of alienation, there are yet a number of other sociologists and social psychologists who have theorized about alienation, including – but not limited to – Herbert Marcuse, Robert Blauner, Stanley Pullberg, Karen Horney, and C. Wright Mills. While these theorists differ in terms of how they define the specific processes in which one becomes alienated, at the heart of their conceptualizations is the individual left with the feeling that his or her major tasks are meaningless and simply a means to an end, and a sense of a loss of control over one’s life situation and relationships with others. Likewise, there is consensus in the literature that alienation is not a general state of being, but
rather a context-specific condition (Clark 1959; Martin, Bengston, & Acock 1974; Wegner 1975; Wenz 1979). I now turn to a discussion of this context-specific nature of alienation.

**Alienation as Context-Specific**

Many scholars believe that alienation is not a general state of being; rather, individuals can experience alienation differentially depending on the social context. Several scholars have attempted to explain why certain social contexts can be particularly alienating for individuals, while other social contexts are not. For example, Clark (1959) asserts that individuals desire different amounts of power from different social contexts (i.e. work, family, education, etc.), so while individuals may feel content in one particular social setting, they may feel alienated in others. Likewise, Wegner (1975) posits that alienation is the result of an incompatibility between an individual’s personality and the particular social context in which the individual is situated. As individuals have different levels of compatibility with different social contexts, the degree and manifestation of alienation that an individual experiences are context-specific.

There is also support in the literature for an age-specific contextualization of alienation. In fact, according to Martin et al. (1974), differences in age can actually predict differences in levels of alienation, as well as the specific social contexts within which individuals will experience alienation. Their research involved a study of individuals from three different age groups: youth/young adulthood, middle age, and old age. All participants were given a survey measuring levels of alienation across different social contexts (education, religion, politics, family, and the economy). Results of the study indicate that when looking at “total alienation”, the different age groups experienced different levels. Those from the youngest age category, youth/young adulthood, scored highest in terms of overall alienation, followed by old age, and then middle age. The premise made by the authors of the study is that levels of alienation can be
determined by one’s level of participation within the central institutions of society. Because youth and young adults constitute a group with little power within these central institutions, and the elderly typically withdraw participation from many of these institutions as they age, both of these age groups exhibit the highest levels of alienation. Wenz (1979: 19) supports Martin et al’s conclusions, particularly about levels of alienation for youth and young adults, and contends that alienation may in fact be “endemic” to the period of adolescence.

The identification of adolescence as a markedly alienating period has been supported by many researchers (Bond, Butler, Thomas, Carlin, Glover, et al. 2007; Calabrese 1987; Hyman and Snook 2001; Martin et al 1974; Smith, Calam, and Bolton 2009; Wenz 1979). As Smith et al. (2009) note, this is largely attributable to the major biological, psychological, and social changes characteristic of the period of adolescence. However, when taking into consideration the context-specific nature of alienation, it is important to identify the social contexts from which adolescents tend to be alienated. According to Calabrese (1987), researchers have consistently pointed to the school environment as the major contributor of adolescent alienation. School alienation is thus worthy of thorough examination not only because it is the prominent source of adolescent alienation, but because schools serve as accessible and relatively stable sites to target interventions to help alleviate adolescent alienation (Smith et al. 2009).

When discussing the concept of school alienation, it is imperative to acknowledge that several types of schools exist, with varying structures, aims, guiding philosophies, and student populations. It is apparent, however, that school alienation occurs at comparable levels across these different types of schools. For example, Propper (1970) conducted a study in which American males from both a prestigious, private catholic high school and a public high school were administered three questionnaires aimed at assessing students’ levels of alienation. Results
of the study indicated that there were no statistically significant differences in the mean alienation scores of the two groups. This study reveals the similarities in levels of student alienation among both private schools and mainstream public schools. However, Propper does not describe the organizational similarities among these different institutions that may explain the lack of variation in levels of student alienation.

Accordingly, a study conducted by Calabrese (1987) provides more insight. This study examined ninth grade American female students from both a private all-female urban Catholic school, and a co-ed public school in a small bedroom community. Thus, this study took into account variations not just in student composition, but in the broader social contexts in which these students come from as well. Like Propper’s (1970) study, the findings suggest that there is no statistically significant difference between the public and private school students in terms of their “total alienation” scores. However, unlike Propper’s work, Calabrese (1987) identifies the structural and bureaucratic commonalities among these schools that contribute to student alienation. Overall, the maintenance of high-control environments in which students perceive that they are being subject to unjust rules and regulations, as well as environments where the individual needs of students, particularly marginal students, go largely unattended to, are the common alienating features of these institutions.

These findings are also supported by Strauss (1974), who examined urban and suburban public schools, as well as parochial Catholic schools and independent private schools. Strauss maintains that a lack of student involvement in decision making and the subsequent “power gap” perceived by many students are common to students in all types of schools, and serve as the underlying cause of school alienation. Thus, it appears that it is safe to discuss “school alienation” as something symptomatic of the common features of contemporary high schools,
regardless of the specific form the school takes. From an Ecological Systems standpoint, the similarities between public and private schools can be attributed to the fact that both types of institutions work under the same macro-, exo-, and mesosystem influences. Accordingly, the present study does not differentiate between students from different types of schools. As this study’s focus is on the broader social contexts that influence school structures and processes, the sample used in this analysis includes students from both public and private schools.

“Alienation” is a particularly interesting construct, as it can be thought of theoretically, in terms of a process through which individuals respond to the workings of a capitalist society, but it is also conceptualized in the literature as a measurable condition. I therefore turn to a discussion of how “alienation,” in general, has come to be operationalized, and more specifically, how student alienation tends to be measured within contemporary research on this topic.

_Alienation as Multidimensional_

The benefits of acknowledging the multidimensionality of alienation are far-reaching. It serves to provide a greater understanding of the nature of alienation, and the conditions that contribute to its development (Cummings & Manring 1977; Lacourse, Villeneuve, & Claes 2003). Melvin Seeman (1959) was one of the first scholars to explore the multidimensionality of alienation and to actually identify a clear set of dimensions (Lacourse et al. 2003). Seeman’s *On the Meaning of Alienation* (1959) combines the insights of many sociological theorists and constructs what is widely considered to be a “model of alienation” (Senekal 2010: 7-8). This model builds on Karl Marx’s original conceptualization of worker alienation and is broken down into five dimensions: powerlessness, meaninglessness, normlessness, social isolation, and self-estrangement. Powerlessness relates to the worker’s condition as described by Marx, whereby
individuals believe they do not have control over their own situation. Meaninglessness is the result of individuals no longer understanding the functioning of the society of which they are a part; they are unable to predict the consequences of their actions, and they fail to understand the meaning of these actions. Normlessness involves the inability to reach socially acceptable goals through socially acceptable means, or to simply not possess socially acceptable goals in the first place. Social isolation draws on Robert Merton’s notions of ritualism (excessively concentrating on the proper means to achieve goals, instead of the goals themselves); and retreatism (opposing social goals so strongly that one abandons their social roles). Finally, self-estrangement is a state in which the various activities in which an individual takes part are solely means of achieving economic or other rewards; these actions are purely instrumental, as opposed to an expression of the individual’s free will and desire (Seeman 1959: 783).

As previously discussed, there is support within sociological, psychological, and educational literature that alienation is not a general state of being; rather it is context-specific, and can differ among different age groups. Thus, it is important to identify the ways in which adolescents are specifically alienated. Accordingly, Mau (1992) has produced the most thorough investigation of multidimensional adolescent alienation to date. Her study, which examined 2056 American secondary school students, used a 24-item questionnaire that had students rate their level of agreement on a variety of statements using a Likert-type scale. Responses were then coded as powerlessness, meaninglessness, normlessness, and social estrangement; the four dimensions that Mau posits as being applicable to the school context. What Mau adds to the literature on adolescent alienation, however, is the specific ways in which these dimensions apply to the adolescent experience, and how they manifest.
First, Mau (1992: 732) conceptualizes powerlessness as the placement of high value on societal goals, accompanied by the perception of an inability to actually achieve those goals. Mau asserts that those with poor academic performance, or those in curricular tracks that prevent them from attending university, are especially vulnerable to feelings of powerlessness. Likewise, those with poor relations with teachers are vulnerable to powerlessness as they may view the treatment they receive as unjust and their academic outcomes as inevitably in the hands of their teachers. Powerlessness manifests in the form of acting out by class cutting or rebelling. Ironically, as Mau points out, this invariably leads administrators to apply more coercive power and thus increase feelings of powerlessness among students, perpetuating the cycle.

Second, meaninglessness is characterized by feeling a lack of connectedness between the present and future. Students do not perceive there to be a purposeful connection between their present school activities and their future educational and occupational endeavors. Students experiencing meaninglessness are unable to internalize the value of learning particular aspects of the curriculum now to help with their future; which is largely attributable to the fact that many students do not know what they want to do with their futures in the first place. Meaninglessness manifests in the form of students participating in actions and thought processes that are very present-oriented, demonstrating a lack of concern for how their present behaviours will influence their future (1992: 733).

Third, normlessness is present when individuals believe that they do not have to adhere to socially approved behaviour in order to achieve their goals. According to Mau, students’ feelings of normlessness manifest in the form of rejecting the legitimacy of school officials, rebelling against school rules, or perceiving “C” and “D” grades to be acceptable. Mau also asserts that there are processes within schools that actively work to separate particular students from the
normative school structure, for example, the processes of grading and grouping whereby differences between students are accentuated. Likewise, students with peer groups who tend to reject school rules are faced with the dilemma of following school norms or the norms of their peer group; more often than not, such students tend to choose the norms of their peer group. Thus, common school structures and processes, as well as the influence of peer groups, have the ability to foster feelings of normlessness among adolescent students (1992: 733).

Last, social estrangement, according to Seeman (1959), is characterized by a lack of integration into friendship networks and minimal participation in social organizations. Applying this to the school environment, Mau asserts that social estrangement is evident when students lack peer groups and do not participate in school activities (1992: 733).

Identifying these different dimensions of alienation is particularly useful in deciphering potential causes of student alienation, and helps to make explicit the connection between student alienation and a variety of negative or maladaptive feelings and behaviours among adolescents. Most importantly, this information can serve to alleviate or prevent the development of alienation among adolescents. Accordingly, I now turn to a discussion of the features of the school environment that contribute to alienation.

**Contributors to Student Alienation**

Recalling Ecological Systems Theory, schools, at the microsystem level, are influenced by capitalist ideologies at the macrosystem level. In this section, I discuss the ways in which these capitalist ideologies have shaped the school structures and processes that then work to alienate students, including: the use of hierarchical structures, the oppression of marginal groups, the use of repetitive and labourous learning strategies, and the use of highly selective curriculum.
I begin with a discussion of Everhart’s (1983) work on hierarchy and the ways in which it alienates students within schools.

Everhart (1983) applies Marx’s conceptual framework to students in contemporary classrooms. According to Everhart, schools are characterized by a hierarchical structure that adheres to highly standardized practices. He likens the thinking and effort put forth by students in classrooms to “labour”, and asserts that, in much the same way as workers, they can be alienated from these activities. Specifically, Everhart compares the classroom to a factory, as students have little control over the work they are assigned, how they go about completing it, and what the final product should look like. Not only do students lack control over their work, but the work itself often targets “reified knowledge”, which, according to Everhart is “absolute, defined categorically, presented to students in isolation, and over which students have no meaningful control” (1983: 193). Everhart asserts that students are thus alienated the same way that workers are within similar work environments.

Likewise, Davidson (1996: 35-49) posits four distinct factors that she believes contribute to student alienation. First, Davidson concurs with Everhart’s assertion that student alienation can occur by way of the hierarchical, bureaucratic relationships and practices characteristic of most schools that support status divisions between teachers and students. Second, certain groups of students come to be socially isolated through the practice of academic tracking, whereby school systems separate groups of students according to their academic and social abilities (for example, streaming students into the “academic” and “applied” course tracks). Taking this broader, systemic practice of academic tracking to the individual level, a third alienating factor within schools that Davidson presents is the way in which teachers express their negative expectations and/or differential treatment of particular students. Again, this works to socially
isolate and estrange particular students from normative school practices. Liazos (1978) argues that this practice is in fact intentional. He contends that contemporary education works to keep particular individuals at a certain place in society. Contrary to the belief that education provides the opportunity for upward mobility among individuals from lower socioeconomic backgrounds, Liazos asserts that schooling is designed in such a way as to keep these students at the bottom; to perpetuate class inequalities in order to maintain the capitalist economic structure in society at large. Finally, Davidson asserts that teachers may withhold, or make inaccessible, information that may be particularly valuable to students. For example, teachers may neglect to present curricular content in differentiated ways so as to reach more students, or fail to paint a well-rounded picture of a particular curricular concept. This undoubtedly stems from the standardized practices to which teachers are bound, and works to alienate students as their school work becomes meaningless and they feel dissatisfied with their educational experience.

Furthermore, Schmiedeck (1979) notes that the size of contemporary high schools plays a particularly alienating role. This increase in size, which Schmiedeck notes as taking off during the 1960s and 1970s, is due to a number of factors, including population growth, the increasing functions that high schools are having to perform, and to facilitate economic and administrative efficiency. Most notably, Schmiedeck argues that contemporary schooling attempts to model industrial and business patterns too closely; structuring schools based on efficiency instead of the needs of the students.

**Summary: Ecological Systems Theory, the Multidimensions of Alienation, and the Various Forms of Engagement**

Because several theories and concepts have been discussed thus far, it is important to take a moment to summarize the flow of ideas and the relationships between constructs. Ecological Systems Theory posits that human development is influenced by larger social contexts,
comprised of a set of four systems, each nested inside the next: the macro-, exo-, meso-, and microsystem. The macrosystem consists of the broader societal ideologies that then influence the functioning of the remaining three subsystems. Here, I am concerned with how students become disengaged from school: a relationship between adolescents and one of the most important components of their microsystems. I employ Karl Marx’s theory of alienation to describe how ideologies at the macrosystem level influence students’ relationships with school. In brief, capitalist ideologies at the macrosystem level then impact the functioning of industry and politics at the exosystem level. Schools, as components of the microsystem, are guided both directly and indirectly by the policies and labour market demands of the exosystem, and relationships between these two systems make up the mesosystem. As summarized in the literature, schools have adopted a set of structures and processes that are informed by capitalist ideologies (for example, the use of beaureaucratic, hierarchical structures among administration, staff, and students) and work to alienate students.

My premise, here, is that this process of alienation from school is the source of student disengagement. Interestingly, many authors use the term “alienation” as the antithesis to student engagement; disengagement and alienation are sometimes used synonymously (for example, Alexander, Entwisle, & Kabbani 2001; Bond et al. 2007). In fact, Fredericks et al. (2004), in addition to providing a widely-used three-part conceptualization of school engagement, use “alienation” to describe the opposite of engagement. They also articulate a set of factors that can work to alleviate alienation, or disengagement, among students: autonomy and voluntary choice; small class size; clear and consistent goals; student participation in school policy and management; opportunities for staff and students to be involved in cooperative endeavors; and academic work that allows for the development of products (2004: 73).
Not only do Fredericks et al. (2004) use the term “alienation” to denote the antithesis of school engagement, but the three ways that the authors posit students can become disengaged from school parallel the symptoms of school alienation as described by Mau (1992). As previously discussed, Mau outlines the different dimensions of school alienation, and the ways in which students respond to these different types of alienation in the school setting. These responses are indicative of Fredericks et al.’s behavioural, emotional, and cognitive forms of disengagement. To elaborate, Mau posits that powerlessness manifests in the form of acting out and/or class cutting, which are clear examples of behavioural disengagement. Likewise, students respond to meaninglessness by engaging in thought processes and behaviours that demonstrate a lack of concern for their future well-being, which is indicative of both behavioural and cognitive disengagement. Students experiencing normlessness, according to Mau, respond by rejecting the legitimacy of school officials and rebelling against school rules, which is symptomatic of both behavioural and emotional disengagement. Last, students react to social estrangement by refraining from integration into friendship networks and other social activities in the school setting, which demonstrate both behavioural and emotional disengagement. Thus, the relationship between alienation and school disengagement appears to be supported in the literature. A direct relation is made through the use of “alienation” as an opposing notion of engagement, and an indirect, conceptual relation is made when examining the manifestations of the different dimensions of alienation.

Therefore, this thesis is framed on the premise that student disengagement is the result of influences from broader societal ideologies and processes, namely, capitalism. Capitalist ideologies influence the functioning of schools, and have the ability to alienate students. The symptoms of student alienation posited by Mau (1992) encompass the three subtypes of school
engagement put forth by Fredericks et al. (2004). A detailed diagram to illustrate this theoretical and conceptual framework is provided in Figure 2.

**FIGURE 2. Summary: Ecological Systems Theory, Alienation, and School Engagement**

![Diagram](attachment:diagram.png)

**The Consequences of Student Alienation**

Several studies have examined the association between student alienation and a number of negative outcomes among adolescents. For this thesis, I am ultimately linking the process of student alienation to adolescent suicide ideation. Thus, the literature on the negative outcomes of student alienation is important to thoroughly examine in order to decipher whether or not the link between student alienation and suicide ideation is a logical association to make. Evidently, research on this topic consistently points to student alienation as an antecedent for a number of different negative outcomes. Several scholars have linked alienation to school violence and
bullying behaviour (Leung & To 2009; Natvig, Albrektsen, & Qvarnstrom 2001; Warner, Weist, & Krulak 1999; Williamson & Cullingford 2003). However, this literature is far outweighed by the research on alienation and mental health outcomes. Thus, the following section will outline key research findings in this area, focussing on adolescent identity formation, Post Traumatic Stress Disorder, and – most notably – depression and suicidality.

Identity Formation

Schmiedeck (1979) explores how the alienating nature of the size of contemporary high schools impacts adolescent identity formation. What is particularly troubling about the increasing size of schools is that it impedes adolescents’ ability to form stable, long-lasting personal relationships within a supportive school community. Schmiedeck asserts that because adolescents are undergoing a period of transition marked by confusion, uncertainty, and vulnerability, they need to be able to rely on old relationships for support, and feel confident in establishing new relationships. It is within these stable personal relationships that individuals form their identity; by defining themselves as an individual within that group, and understanding who they are in relation to the people they love and support. However, Schmiedeck notes cohesive student communities are hard to establish given the large populations of contemporary high schools, in combination with the fact that most students select their own classes and therefore all have different schedules. To compensate, students tend to form small cliques based on shared interests, qualities, or abilities. According to Schmiedeck, membership within these homogenous groups impedes healthy identity development, as the student lacks the ability to learn from various positive and negative characteristics of their peers.

Tarquin and Cook-Cottone (2008) also explore the relationship between alienation and identity, particularly with respect self-concept. While the authors study this relationship among
university undergraduate students, it nevertheless provides insight into the ways in which alienation can pose consequences for adolescent self-concept. In their study, in which they administered the Student Alienation and Trauma Scale to 351 students, Tarquin and Cook-Cottone found that there is a moderate negative correlation between student alienation and self-concept. Specifically, as the respondents’ overall alienation scores increase, self concept decreases. This relationship is statistically significant (p < 0.01) (2008: 20). Tarquin and Cook-Cottone assert that individuals’ feelings and perceptions about themselves are mediated by their experiences within social interactions, and that generally speaking, students who feel a lack of belonging within the school environment (have strong feelings of social isolation and estrangement) experience decreased identity integration. On the most extreme end, Tarquin and Cook-Cottone add, the experience of victimization and/or bullying tends to especially decrease students’ self-concept.

Post-Traumatic Stress Disorder

Although quite limited in scope, some scholars have proposed that there is a relationship between school alienation and Post-Traumatic Stress Disorder (PTSD). Tarquin and Cook-Cottone (2008) assert that, in extreme cases, the repeated experiences of daily alienation in the form of being wrongly isolated from one or more school groups or activities can cultivate symptoms of PTSD among some adolescents. Likewise, the Student Alienation and Trauma Scale is a tool that was originally developed to assess PTSD in children, and with the addition of only a select few questions geared specifically to assess alienation-related symptoms, the Scale is now used to assess both alienation and PTSD (Hyman, Cohen, & Mahon 2003). This undoubtedly implies a similarity between the two conditions, or that one may in fact contribute to the other.
Depression and Suicidality

While they do not speak specifically of the relationship between alienation and depression, Bond et al. (2007) analyze the relationship between students’ levels of connectedness to the school environment and depressive symptoms. They conceptualize “connectedness” as broken down into school connectedness and social connectedness. A high degree of school connectedness is characterized as feeling a commitment to school goals, a sense of belonging within the school environment, having positive relationships with teachers and peers, and feeling that there are plenty of opportunities to participate. Likewise, a high degree of social connectedness is characterized by the feeling of always having someone to talk to, to depend on, and to be trusted within a friendship group (2007: 11). It is evident that, although the authors do not specifically use the concept of student alienation, the notions of school and social connectedness incorporate Mau’s (1992) conceptualizations of powerlessness, normlessness, and social estrangement.

Bond et al’s study involved 2768 Australian adolescents who were enrolled in public, catholic, and private independent schools. The results of the study indicated that students who had reported low school connectedness and/or low social connectedness in the eighth grade were more likely to develop depressive symptoms by the end of the tenth grade (2007: 11). The strength of this study lies in its ability to show the direction of the relationship between alienation-like symptoms and depression. Assessing both school and social connectedness, and mental health status, at both the beginning and the end of the study, allowed the researchers to observe the order in which the conditions occurred.

Likewise, depression is undoubtedly an antecedent of suicidal behaviour (Lee 2007). Wenz (1979) contends that adolescence, itself, is an effective predictor of whether or not
someone will attempt suicide when experiencing suicidal thoughts. However, according to Lee (2007), among those who are already depressed, alienation serves as a mediating variable in the relationship between depression and suicidality, in that it can actually compound the effects of depression and increase one’s likelihood of experiencing suicidal thoughts. Nevertheless, more research is needed to support the hypothesis that alienation contributes to depression, and at its most extreme case, suicidality.

While further research is needed on the association between alienation and suicidality, there has been – albeit limited – research conducted on the relationship between alienation and health-damaging behaviour. Nutbeam, Smith, Moore, and Bauman (1993) examine data from a World Health Organization (WHO) cross-national study of health behaviour among school-age youth. The study not only revealed that a substantial number of youth feel alienated from their schools, but that there is a relationship between alienation and health-damaging behaviour. The authors found that as the degree of alienation felt from the school environment increases, the likelihood of participating in health-damaging behaviours (ex. smoking and alcohol abuse) increases. These findings help to establish the foundation upon which future research on school alienation and health-damaging behaviour can build, namely, research examining the impact of school alienation on suicidality.

In the preceding section, I established that there is a theoretical and conceptual relationship between alienation and school disengagement. Here, alienation has been associated with a number of negative outcomes for adolescents, particularly related to mental health. I will now shift to a discussion of the literature on the consequences of school disengagement to further establish this topic as worthy of examination, and to reveal why I anticipate there to be a relationship between school disengagement and suicide ideation.
The Consequences of School Disengagement

This section provides an overview of the prominent themes in the literature regarding the consequences of school disengagement. I will discuss the key findings from studies that have empirically tested the relationship between school disengagement and a variety of negative outcomes, including general delinquency, drug use, low academic achievement, dropping out, and decreased life satisfaction. In my discussion of each study, I will outline how the authors have defined school or student engagement; evidently, many of these studies use Fredericks et al.’s (2004) three-part conceptualization, or close variants of it. As this thesis examines a potential consequence of school disengagement, it is important to generate an understanding of how this type of research is generally conducted. As such, I will provide an overview of the research methods used in each study, and what the findings were. I will then make note of the theoretical approach that was used in each study.

General Delinquency

Bender (2012) explores the possibility of school engagement as a mediating factor in the relationship between childhood maltreatment and delinquent behaviour. Here, school engagement is conceptualized and measured by seven items. The author does not make explicit reference to Fredericks et al.’s (2004) three types of engagement, but her conceptualization does include aspects of the three types. The eight items include how often youth: enjoy being at school (emotional); try to do their best work (cognitive); find class interesting (cognitive); get along with teachers (emotional); listen carefully (behavioural); complete homework (behavioural); and get along with other students (emotional). Bender uses a sample of 1179 youths, aged 11 to 15 years from the 2002 National Survey for Child and Adolescent Well-Being, a national longitudinal probability study of child welfare in the United States. Three latent
growth curve models (LGMs) are produced. First, Bender examines variations in initial levels of
delinquency and changes in delinquency over time. Then, the direct effect of maltreatment risk
on delinquency and change in delinquency is assessed, controlling for background variables.
Finally, school engagement level is incorporated to determine if it plays a mediating role in the
direct effect of maltreatment risk on delinquency and change in delinquency. There are three key
findings of this study. First, maltreatment severity is positively associated with school
disengagement (p <0.05). Second, school disengagement is positively associated with
delinquency (p<0.05). Third, the original significant effect of maltreatment on delinquency was
no longer significant after school disengagement was included in the model (p=0.134). Thus,
Bender concludes that disengagement indeed mediates the relationship between maltreatment
severity and delinquency. Life Course Theory is employed to explain this relationship. In sum,
Bender emphasizes that the school is an important social bond during the period of adolescence,
and that it plays an important role in instilling prosocial behaviours, even among those who have
been maltreated as children. In effect, Bender argues that despite negative events throughout the
life course, adolescents have the ability to maintain positive, socially appropriate behaviours if
they maintain a bond with their school, as schools are particularly important socialization agents
during the period of adolescence.

Likewise, Hirschfield and Gasper (2011) examine the relationship between school
engagement and both school misconduct and general delinquency. The authors explicitly use
Fredericks et al.’s (2004) three types of school engagement. Emotional engagement is measured
by how much the students would miss aspects of the school experience, including the principal,
teachers, students, and the treatment of students. Behavioural engagement is measured by the
ratio of number of hours spent doing homework on a typical weekday relative to the number of
hours spent doing six different leisure activities. Cognitive engagement is measured by taking the mean of eight items that target psychological investment in school, for example, if students believe that studying harder will allow them to do better in light of a poor school performance. The relationship between school engagement and both school misconduct and general delinquency is assessed using a sample of 5th through 8th grade students from 22 public elementary schools. Survey data were collected in two waves, about a year apart. Ordinary Least Squares (OLS) regression was used to estimate bidirectional relationships between school engagement and delinquency. The findings of Hirschfield and Gasper’s (2011) study reveal a modest relationship between emotional disengagement at the time of the first survey wave, and school misconduct at the time of the second wave. A strong, positive relationship was found between behavioral disengagement in wave 1 and school misconduct in wave 2. Interestingly, cognitive disengagement had a modest, negative relationship with general delinquency (cognitive engagement increased rates of delinquency). A particularly beneficial feature of this study is that it controlled for the directionality of the relationship; the authors revealed that disengagement influences school misconduct, as opposed to misconduct influencing disengagement. Hirschfield and Gaspar draw on Social Control Theory in their explanation of this relationship. Referencing Hirchi (1969), the authors maintain that weakened attachments to school actors (i.e. teachers and peers) reduce students’ concern about these actors’ disapproval. The authors add that behavioural engagement simply lowers students’ time and energy available to be able to engage in deviant activities.

**Drug Use**

Bond et al. (2007) examine the associations between school engagement in early secondary school, and substance use two to four years later. Here, the authors use the term
“school connectedness”; however, the scale items used to measure this construct are closely aligned with Fredericks et al.’s (2004) three types of engagement. To elaborate, school connectedness is measured based on a student’s commitment to school (cognitive engagement), relationships with teachers (emotional engagement), relationships with peers (emotional engagement), participation (behavioural engagement), and sense of belonging (emotional engagement). Bond et al. use data from a sample of 2678 8th grade students from 26 secondary schools in Australia. Students from public, Catholic, and private schools from both metropolitan and rural regions were included in the sample. This sample was then surveyed again in the 10th, 11th, and 12th grades. Through the use of multivariate, logistic regression analysis, the authors assessed students’ likelihood of engaging in substance use in relation to levels of school engagement (school connectedness). Results indicate that students who scored low in school connectedness in the 8th grade were more likely than those who scored high to engage in substance use in the 10th grade. Specifically, low school connectedness increased the likelihood that a student would drink, and/or become a regular smoker, and/or use marijuana. Bond et al draw on the social development model to provide insight into this relationship. In brief, the authors propose that a strong attachment to family, schools, peers, and community in combination with positive socialization experiences from these social contexts, is a protective factor against antisocial behaviour, including substance use. The authors maintain that it is the strong sense of emotional security stemming from these relationships that prevent youth from engaging in sensation-seeking behaviours in the form of substance use.

Li and Lerner (2011) also examine the relationship between school engagement and substance use. The authors explicitly identify the use of two of Fredericks et al.’s (2004) types of engagement: behavioural and emotional engagement. Data for this analysis were derived from
the 4-H Study of Positive Youth Development, a longitudinal sample of 6864 American adolescents over the course of seven waves (5th through 11th grade). To control for the directionality of the relationship, youth who had engaged in substance use prior to the study were excluded from the analysis. Results of the study reveal that both behavioural and emotional engagement in school is inversely related to the likelihood of initiating substance use. In other words, as engagement decreases, the likelihood of engaging in substance use increases. Although this study is particularly useful as it controls for the directionality of the relationship between school engagement and substance use, unfortunately the authors do not provide any theoretical insight as to why this relationship might exist.

*Academic Achievement*

Dotterer and Lowe (2011) explore the association between school engagement and academic achievement. The authors use Frederick et al.’s (2004) notion of behavioural engagement, and use the term “psychological engagement” to combine both cognitive and emotional engagement. Data were drawn from the NICHD Study of Early Child Care and Youth Development, a comprehensive longitudinal study including 1364 from 10 locations across the United States. The authors conducted a multi-group structural equation model to assess the underlying mechanisms affecting academic achievement. Findings of Dotterer and Lowe’s (2011) study indicate that both behavioural engagement (p<0.05) and psychological engagement (p<0.05) increased the students’ likelihood of having higher test scores. The authors note that their analysis is framed within an Ecological Systems Perspective. Based on the work of Fredericks et al. (2004) and Hughes, Luo, Kwok, and Lloyd (2008), they posit that certain aspects of the classroom context, namely, instructional quality, socioemotional climate, and student-teacher relations interact with the personal characteristics of students. According to the
Authors, it is this reciprocal relationship that explains not only how students become disengaged and suffer academically, but why some students become disengaged while others do not. In sum, the authors point to the interplay between personal characteristics and the classroom environment as the source of disengagement and subsequent lowered academic achievement.

Wang and Peck (2013) also provide insight into the relationship between school engagement and academic achievement. The authors explicitly define school engagement using Fredericks et al.'s (2004) three subtypes. This particular study used data from a sample of 1025 adolescents who completed the Maryland Adolescent Development in Context Study. The study was longitudinal in nature, assessing respondents when they were in the 9th grade, 11th grade, and one year after they were expected to graduate from high school. Respondents were placed into the following categories based on their levels of behavioural, emotional, and cognitive engagement: Moderately Engaged (moderate across all three types); Minimally Engaged (minimal across all three types); Highly Engaged (high across all three types); Cognitively Disengaged (low cognitive, moderate behavioural, and moderate emotional); and Emotionally Disengaged (low emotional, moderate behavioural, and high cognitive). Through the use of logistic regression, the authors found that the engagement profile groups, created when the respondents were in the 9th grade, predicted GPA and educational aspiration at 11th grade. Specifically, the two groups with the lowest GPAs were those categorized as Minimally Engaged and Cognitively Disengaged. Wang and Peck (2013) use stage-environment fit theory as the theoretical underpinning of this research. In brief, stage-environment fit theory suggests that engagement improves when there is better stage-environment fit. Here, the stage is the period of adolescence, and the environment is the school. The “fit” is characterized by the fulfillment of
the following needs: autonomy, relatedness, and competence (Zimmer-Gambeck, Chipuer, Hanisch, Creed, & McGregor 2006).

Dropping Out

Alexander, Entwisle, and Kabbani (2001) examine the relationship between school engagement and dropping out in a sample of 790 students from Baltimore over the course of 9 years. Engagement was conceptualized in terms of the following items, which fit into Frederick et al.’s (2004) model: teachers’ ratings of external behaviour and classroom adaptability (behavioural); work habits and conduct as documented on report cards (behavioural and cognitive); and attitudes in regards to finding schoolwork interesting (cognitive), enjoying school (emotional), and liking their teacher (emotional). Results of the study indicated that engagement behaviours were in fact better predictors of eventual dropout than both test scores and report card marks. The theoretical basis for the authors’ work is Life Course Perspective, in that dropping out is not an event, but is rather a process of progressive academic disengagement over time that has been influenced by not just school factors, but the home, community, and the individual as well. The authors draw on two other social-psychological perspectives: the Frustration-Self Esteem Model, and the Participation-Identification Model. According to the Frustration-Self Esteem Model, initial poor academic performance causes students to question their academic competence, and weakens their attachment to the school. Dropping out is thus a means of escaping a psychologically “punishing” environment (Finn 1989). Similarly, the Participation-Identification Model posits that positive school experiences (i.e. being acknowledged for one’s achievements, having the opportunity to participate in extra-curricular activities) encourage a sense of belonging and thus strengthen the student’s attachment to the school, decreasing the likelihood of dropping out. At the heart of these two theories appears to be the importance of
positive and negative experiences in the school environment that evoke emotional responses among students, depending on their individual characteristics. These emotional responses are what appear to attach (engage) or detach (disengage) the student from the school context.

Henry, Knight, and Thornberry (2012) explore the association between school disengagement and dropout as well. In this study, school disengagement was determined by taking the sum of five indicators: standardized test scores (scoring less than proficient in one or more subjects); attendance (missing at least 20% of school days in a given year); failing one or more courses; one or more suspensions from school; and grade retention. Thus, Henry et al. make use of Fredericks et al.’s (2004) behavioural and cognitive forms of engagement. Data from the Rochester Youth Development Study, a longitudinal study that began in 1988, were used for this analysis. The sample included 1000 7th and 8th grade students. Findings of the study indicate that, after adjusting for all control variables, school disengagement is positively associated with dropping out of school (p<0.05). In other words, the more indicators of school disengagement a student has, the more likely they are to drop out of school. Like Alexander et al. (2001), the authors use Life Course Theory to explain this relationship, viewing dropping out as a trajectory that unfolds over time, influenced by previous life events. The authors add that because finishing one’s high school education is a major developmental task of adolescence, failing to do so can have long-term negative consequences on the individual.

Research conducted by Archambault, Janosz, Fallu, and Pagani (2009) found congruent results in their study of school engagement and dropping out. Using Fredericks et al.’s (2004) three-part conceptualization of school engagement, the authors analyze a sample of 11827 7th to 9th graders from 69 high schools in Quebec, Canada. Not surprisingly, results indicate that school engagement predicts school dropout (p<0.001), after adjusting for individual and family controls.
What this particular study adds to the literature is that, upon breaking down “school engagement” into the different measurement items, student compliance and attendance are the best predictors of dropout, which suggests that behavioural engagement plays a particularly important role in student dropout. Archambault et al. use Social Control Theory in their analysis of this relationship. Drawing on Hirschi (1969), the authors assert that adolescent antisocial behaviour is the result of a breakdown of important bonds between an individual and society. Here, school is posited as an important social bond, and this bond is maintained through commitment, beliefs, attachment, and engagement. School disengagement threatens these four elements and therefore weakens the school bond.

Life Satisfaction

Lewis, Huebner, Malone, and Valois (2011) examine the relationship between school disengagement and adolescent life satisfaction. The authors explicitly state that they use Fredericks et al.’s (2004) three-part conceptualization of school engagement in their correlational analysis. Measures of life satisfaction and the three types of engagement were taken at two points in time: once at the beginning of the school year, and once at the end. Results of the study indicate that increases in cognitive engagement are associated with increases in life satisfaction (p<0.05). In sum, adolescents who were hopeful about their future and believed that their educational experiences would be beneficial to their later lives became more satisfied with their overall lives throughout the school year. This is particularly relevant to the study of adolescent suicide ideation, in that level of life satisfaction undoubtedly affects the likelihood of a teen contemplating suicide.
Student Disengagement: Theoretical Underpinnings

In the majority of the above analyses on the consequences of disengagement from school, the authors have applied various sociological and social psychological theories. Life Course Theory appears to be a popular theoretical approach which articulates the importance of the school bond during the period of adolescence, and how previous life events influence this bond. Other theories used, namely the Frustration-Self Esteem Model, and the Participation-Identification Model, focus on individual students’ interpretation of their own schooling experience and how both individual and contextual factors work together to influence disengagement, as well as students’ reactions to that disengagement.

Drawing on Ecological Systems Theory, we can see that many scholars work to explain the effects of disengagement by looking at the interplay between the different systems. There is always mention of the external social influences on the individual, as well as how the interpretation and experience of those influences are affected by individual characteristics. I apply this line of thinking to this thesis. In sum, schools, by being influenced by broader societal processes, alienate students by facilitating all, or some, of the following feelings: normlessness, meaninglessness, powerlessness, and social estrangement. This process of alienation inherently disengages students in different ways (behaviourally, emotionally, and/or cognitively). However, the degree to which students feel disengaged, and the ways in which they cope with their disengagement, differ on the basis of individual characteristics. As such, there are certain individuals who are more likely than others to engage in suicide ideation as a coping strategy, and this is attributable in part to their sociodemographic characteristics. The sociodemographic groups that are at an increased risk of experiencing suicide ideation are discussed later in this
chapter. I now turn to an overview of the literature that draws a connection between school disengagement and suicide ideation.

**School Disengagement and Suicide Ideation**

Young, Sweeting, and Ellaway (2011) explore the relationship between different aspects of the school (school connectedness, denomination, school ethos, and size of school) and suicide risk among a sample of 1698 Scottish adolescents. The survey, which was longitudinal in nature, assessed students at age 11, 15, and 19. School engagement is used as an indicator of school connectedness and is assessed at all three phases of the study. Measures used to assess levels of school engagement largely tap into emotional engagement as opposed to behavioural or cognitive engagement. Likewise, suicide risk is assessed during the second phase of the study (age 15), using the following questions: “In the last year, was there a time when you thought seriously about killing yourself?” and “Have you ever, in your whole life, tried to kill yourself or made a suicide attempt?” If a respondent answered “yes” to either of these questions, they were categorized as “suicide risk” (2011: 15). Results of the study indicate that, after adjusting for confounders, school disengagement has a statistically significant relationship with suicide risk (p<0.01). Specifically, school disengagement accounted for a 15-18% increase in the odds of being classified as having suicide risk. Another important finding of this study was that there was very little variation in suicide risk among the different types of schools (the study assessed schools of different denominations and sizes). This is particularly important for the analysis used in this thesis research, as it examines students from both public and private schools. Like this thesis research, Young et al. employ the Ecological Systems Perspective as the general theoretical framework for their analysis, which emphasizes the impact of both personal and contextual factors in the development of suicidal thoughts.
Likewise, Carter et al. (2007) examine the association between family connectedness, peer connectedness, and school engagement on a number of health compromising behaviours, including suicide ideation. The authors use a random sample of 652 11th grade students (age 16) from all schools in Dunedin, New Zealand. Respondents were considered to have had suicide ideation if they had seriously thought about committing suicide during the twelve months prior to the survey. Likewise, the authors indicate that they use Fredericks et al.’s (2004) conceptualization of school engagement. The authors took the results from the Likert-type scale questions about school engagement and created categories of engagement levels, rather than treating this variable as a continuous, quantitative variable. Results of the study indicate that there is a statistically significant relationship between school disengagement and suicide ideation (p<0.05). Specifically, being placed in the category of “high school engagement” accounted for a 28% decrease in the odds of having suicide ideation. Carter et al. assert that school engagement had a stronger association with all types of health compromising behaviours than family connectedness or peer connectedness. While this study contributes to our understanding of the relationship between school engagement and suicide ideation, it lacks a discussion of the possible theoretical underpinnings that may explain this association. The authors simply note that family, friends, and school provide different contexts in which adolescents are pushed and pulled into different health-compromising behaviours, and in different ways.

Using data from the National Survey of Child and Adolescent Well-Being, Leslie et al. (2010) also examine the relationship between school engagement and suicide ideation among a sample of 993 youth aged 11-15 years. Specifically, the authors examine youth from families that receive welfare and/or youth using child protective services in the United States. School engagement is assessed using eleven Likert-type scale survey questions, addressing enjoyment of
school, completion of assignments and homework, and relationships with teachers and peers. These indicators of school engagement appear to tap into Fredericks et al.’s (2004) behavioural and emotional forms of engagement. Suicidality is determined by responses to the question: “I have deliberately tried to hurt or kill myself” (2010: 29). Thus, a drawback to this particular study is that it tells us about suicidal behaviour at large, not suicide ideation specifically. Nonetheless, an important finding from this study is that school disengagement had a statistically significant relationship with health-risk behaviours, including suicidality (p<0.05). Specifically, a higher level of school engagement reduced the rate of suicidality by 0.56. Leslie et al. assert that it is necessary to study the multi-level contributors (individual, school, family, community, etc.) when examining health-risk behaviours among youth. The authors add that the youth examined in this particular study (those active in the welfare and/or child protective services) need concentrated attention at all levels of the ecological system in order to facilitate health-promoting behaviours.

**Moving Forward: Addressing the Research Gaps**

Findings from the studies discussed in the preceding section reveal there is reason to believe that school disengagement can be a contributing factor to adolescent suicide ideation. Likewise, these studies further support the use of an ecological systems framework, which considers the whole picture taking into account demographic, as well as contextual factors from the different parts of the individual’s ecological system. However, a number of limitations can be identified in this literature and the broader literature discussed throughout this chapter. Few scholars use school disengagement as a main independent variable in predicting the risk of many negative outcomes, including suicide ideation. Likewise, the studies that do use school disengagement as a main predictor variable lack consistency in using measures that take into
account the various types of engagement (behavioural, emotional, and cognitive). Building on this limitation, few studies use measures of school engagement that ask students to be critical about what it is they are learning: Do they find it meaningful? Do they see their schoolwork as having a greater purpose? Is their schoolwork of any particular interest to them? This gap in the literature may be indicative of broader societal issues surrounding the legitimacy of knowledge (that what has been included as curriculum content is “legitimate” knowledge, rendering other forms of knowledge “illegitimate” or unimportant), and lack of student involvement in curriculum planning.

Finally, with the exception of Leslie et al.’s (2010) work, there appears to be limited investigation of the relationship between school disengagement and suicide ideation among North American adolescents. However, even in Leslie et al.’s work, a representative sample of the general adolescent population is not used. Thus, this thesis research will address these gaps in the literature by way of the following: examining school disengagement as a main predictor variable of suicide ideation; using a school engagement scale guided by Fredericks et al.’s (2004) three types of engagement; and using data from a nationally representative sample of American youth.

With the context of this thesis research established, I now turn to a discussion of the sociodemographic variables that inevitably play a role in the relationship between school disengagement and suicide ideation. This serves to also set the stage for the next chapter, where I will discuss the research methodology for this thesis.

**Sociodemographic Differences in Experiences of Suicide Ideation**

A number of demographic factors and microsystem characteristics have been shown to affect the likelihood that an individual will experience suicide ideation. Here, I discuss the
sociodemographic variables that are the most recurrent in the literature on adolescent suicide ideation. I will start by discussing the demographic factors, including age, sex, race/ethnicity, socioeconomic status, and sexual orientation. Then, I will outline the characteristics of adolescents’ immediate social settings that affect suicidal ideation, including: alcohol use; family history of suicide; parental communication; family composition; and peer relationships.

**Age**

Suicide ideation rates are relatively rare prior to age 10, and then dramatically increase during adolescence (Boeninger, Masyn, Feldman, & Conger 2010; Holinger & Luke 1984; Weissman 1974). First lifetime onset of suicide ideation tends to occur around age 12, and suicide ideation rates typically peak during mid to late adolescence (Nock, Borges, Bromet, Cha, Kessler, & Lee 2008). However, it is important to note that age trends differ for male and female adolescents. Suicide ideation peaks for females around age 16, while it peaks in late adolescence for males (Boeninger et al. 2010).

The correlation between age and suicide ideation rates is largely attributable to the types of life stressors that occur at different age levels. For example, during young and middle adulthood, interpersonal discord, legal issues, financial struggles, and occupational problems are often associated with suicide ideation. In contrast, suicide ideation among seniors has been associated with physical illness, and different types of losses (Conwell, Rotenberg, & Caine 1990; Carney, Rich, Burke, & Fowler 1994; Heikkinen 1995). Children are less prone to suicide ideation before the onset of puberty, which is attributable to a lack of mature reasoning capabilities that make rationalizing and/or planning a suicide attempt particularly difficult (Sher & Zalsman 2005). The onset of puberty is also associated with an increased likelihood of developing depressive symptoms, which in turn increases the likelihood of developing suicide
ideation. However, pubertal onset begins earlier for females than males, which may account for the sex differences in peak age of suicide ideation rates (Boeninger et al. 2010).

**Sex**

Sex is one of the most important predictors of suicidal behaviour in the United States (Carnetto 1997). During childhood, the incidence of suicidal behaviour is rare, and is the same for boys and girls; once adolescence hits, suicidal behaviour increases dramatically among females (Carnetto 1997). Adolescent females are more likely to engage in suicidal behaviour. The Centers for Disease Control (2002) reported that females are in fact twice as likely to engage in such behaviour. However, females are less likely to die as a result of this behaviour than are males (Allison 2001; Carnetto 1997). Thus, while females may think about, plan, and attempt suicide more often than males, the smaller population of males who do think about, plan, and attempt suicide are more likely to go through with, or succeed in, committing suicide.

Sex discrepancies in adolescent suicide ideation can be attributable to the fact that both the prevalence and severity of depression is higher for adolescent females (Allison 2001). In addition to depression, females are more likely to be diagnosed with eating disorders and panic disorders. These are internalizing disorders that cause females to turn pain and hostility inward. In contrast, males are more likely to be diagnosed with conduct disorder, paraphilia, and explosive disorders. These are externalizing disorders that involve the outward turning of pain and hostility (Carnetto 1997). Differences in the ways in which males and females cope with these disorders may also help to explain why sex differences in suicide ideation exist.

**Race/Ethnicity**

The risk of experiencing suicidal behaviour is not equal for all individuals; the rates vary considerably across ethnic and demographic groups (Garlow, Purselle, & Heninger 2005). A
number of different studies have analyzed trends in suicidal behaviours across different racial and ethnic groups with quite varying results. However, there appears to be consensus surrounding three particular demographic groups; suicide rates are highest among the Aboriginal population, and the rate of suicide is lower among African-Americans than Caucasians (Anderson and Smith 2003; Clarke, Colantonio, Rhodes, & Escobar 2008; Garlow et al. 2005).

To account for the increased rate among the Aboriginal population, Clarke et al. (2008) use a stress model framework. In brief, the position of this group in the social system impacts their access to both educational and occupational opportunities. In turn, this impacts not only their income, but their access to several other resources as well. This restricted access exposes this group to particular life stressors to which other demographic groups may not be exposed, causing disparities in distress and suicidality. Other scholars have posited particular features of racial or ethnic groups that may serve as protective factors, most notably, religiosity and moral objection to suicide (Early & Akers 1993; Garlow et al. 2005; Kaslow, Price, Wyckoff, Grall, Sherry, & Young 2004; Morrison & Downey 2000). Likewise, Morrison and Downey (2000) hypothesize that ethnic minorities might not self-disclose suicidal thoughts as readily as Caucasians, skewing survey results about Caucasians having higher rates of suicide ideation than many other ethnic groups. While the precise reasons for disparities are unclear, race and ethnicity are nonetheless important demographic characteristics to control for when examining suicide ideation.

**Socioeconomic Status (SES)**

One of the most powerful predictors of poor health, in general, is low SES (Goodman Huang, Schafer-Kalkhoff, & Adler 2007), and a high SES has been shown to buffer suicide ideation across all age groups (Lee, Myung-II, & Park 2013). The impact of SES on suicide
ideation can largely be attributed to the stress model framework articulated by Clarke et al. (2008) in the previous section on race and ethnicity. However, recent research has explored the ways in which adolescents’ perceived parental SES has an impact on suicide ideation, independent of the real effect of barriers to social and economic resources. In brief, research conducted by both Goodman et al. (2007) and Jeon, Ha, & Choi (2013) reveal that perceived parental SES impacts the adolescent’s sense of self and identity within a social hierarchy, particularly in the school environment. Feeling threatened or inferior to others on the basis of SES can influence the likelihood of an adolescent experiencing suicide ideation. Thus, SES can play an important role, both directly and indirectly, in the development of suicide ideation among adolescents.

Sexual Orientation

Sexual minority youth are at an increased risk of suicidal behaviour compared to their heterosexual counterparts (Cochran, Sullivan, & Mays 2003; DiFulvio 2011; Eisenberg & Resnick 2006; Haas, Eliason, Mays, Mathy, Cochran, et al. 2010; Hong, Espelage, & Kral 2011; King & Merchant 2008; Marshal, Dermody, Cheong, Burton, Friedman, et al. 2013; Meyer 2003; Remafedi 2002; Remafedi, French, Story, Resnick, & Blum 1998). The term “sexual minority youth” is used to describe members of the adolescent population who do not identify as exclusively heterosexual (Marshal et al 2013: 1244). They are members of the population commonly referred to as the LGBTQ (Lesbian, Gay, Bisexual, Transgender/Transsexual, and Questioning) community (DiFulvio 2011: 1612). It is widely supported in the literature that victimization on the basis of sexual orientation, both within the home and at school, is the key contributor to the increased risk of suicidal behaviour among this population (Balsam, Rothblum,
Alcohol Use

Alcohol use is strongly associated with both suicidal behaviour and suicidal death among adolescents (Borges & Rosovsky 1996; Brent, Baugher, Bridge, Chen, & Chiappetta 1999; and Schilling, Aseltine, Glanovsky, James, & Jacobs 2009). Schilling et al. (2009) add that heavy episodic drinking is associated with suicide attempts even when controlling for depression. According to Curtin, Patrick, Lang, Cacioppo, & Birbaumer (2001) and Steele and Josephs (1990), this relationship may be attributable to a number of consequences associated with acute alcohol use, including: constricted attention to immediate difficulties; dampened anticipatory fear; impaired cognitive flexibility; and impaired problem-solving skills. Thus, alcohol use is used frequently as a control variable in studies of adolescent suicide ideation (ex. Bjarnason & Thorlindsson 1994; Blum, Sudhiraraset, & Emerson 2012; Borowsky, Ireland, & Resnick 2001; Borowsky, Taliaferro, & McMorris 2013; Brent, Golstein, & Bridge 2006; Choquet & Menke 1989; Grant & Hasin 1999; Howard, Perron, Sacco, Ilgen, Vaughn, et al. 2010; Kandel, Raveis, & Davies 1991; Moscicki 2001; Swahn & Bossarte 2007).

Family History of Suicide

According to Ramsay and Bagley (1985), contact with suicidal behaviour places individuals at an increased risk of suicide ideation. Accordingly, having a parent that has committed suicide or engaged in suicidal behaviour increases a child’s likelihood that they, themselves, will engage in suicidal behaviour (Pfeffer, Conte, Plutchik, & Jerrett 1979; Sher & Zalsman 2005). Several scholars have attempted to explain this relationship. Bolger, Downey, Walker, and Steininger (1989) posit that having a parent who has committed suicide exposes
children to the concept of death as a means of escaping pain. Likewise, children and adolescents may come to believe that death provides a way to rejoin those they have lost. Wagner, Silverman, and Martin (2003) suggest that the modeling of suicidal behaviour and positive reinforcement of other self-destructive behaviour may explain the relationship between parental suicidality and adolescent suicidality. Alternatively, some scholars assert that there may be a genetic component to this relationship, in that certain genes may predispose children to depressive and suicidal tendencies (Berman, Silverman, & Bongar 2000; Roy 1989). But while family history of suicidal behaviour is frequently cited in the literature as a major contributor to adolescent suicide ideation, it has had limited use as a control variable in statistical analyses (ex. Blum, Sudhinaraset, & Emerson 2012).

*Family Composition*

A non-traditional home environment or a disruption in the parental relationship has been found in several studies to be associated with adolescent suicide ideation (Amato 1993; Ang & Ooi 2004; Anda, Whitfield, Felitti, Chapman, Edwards, et al. 2002; Gould, Shaffer, Fisher, & Garfinkel 1998; and Sher, Oquendo, & Mann 2001). Amato (1993) posits that children of divorced parents have the lowest well-being, those from bereaved families have moderate levels of well-being, and those from intact families have the highest well-being. One possibility for this relationship could be that when families break up as a result of separation, divorce, or death, the resource and support functions of the family may be threatened or cease to exist entirely in light of the situational stress (Amoateng, Richter, Makiwane, & Rama 2004). Likewise, marital discord might contribute to youths’ suicidal behaviour as they may not be able to effectively cope with the stressors of living in an environment wrought with arguments and threats (Wagner 1997). Parents in unhappy relationships may also be less emotionally available to their children.
Parental composition has been used as a control variable in several studies on adolescent suicide ideation (ex. Ang & Ooi 2004; Blum, Sudhinaraset, & Emerson 2012; Borowsky, Taliaferro, & McMorris 2013; Elliott, Colangelo, & Gelles 2005; Lynch, Mills, Daly, & Fitzpatrick 2004; Rey Gex, Narring, Ferron, & Michaud 1998).

**Parental Support and Communication**

Undoubtedly, parental relationships are particularly significant during childhood and adolescence (Au, Lau, & Lee 2009). As such, lack of parental closeness and support can have detrimental consequences on the developing adolescent, and are related to adolescent suicidal behaviour (Dubow, Kausch, et al. 1989; Maris 1981; Sands & Dixon 1986). Lacking the ability to communicate with and turn to a particular parent in time of need can induce feelings of hopelessness, low self-worth (Prinstein, Boergers, Spirito, Little, & Grapentine 2000), and a burden of carrying around unsolvable problems (Orbach 1986). Several scholars point to a lack of communication between the parents and child as a key detrimental factor (Buelow, Schreiber, & Range 2000; De Jong 1992; Dubow et al 1989; Hawton, Newcomb, & Bentler 1982; Miller, Giannini, & Gold 1992; Stivers 1988; Wagner 1997; Wagner, Silverman, & Martin 2000). Parental support and communication are common control variables used in analyses of adolescent suicide ideation (ex. Blum, Sudhinaraset, & Emerson 2012; Dukes & Lorch 1989; Kandel, Raveis, & Davies 1991; Lai Kwok & Shek 2010; Lynch et al. 2004; and Martin et al. 1995).

Abuse within the home has also been cited in the literature as an influencing factor in adolescent suicide ideation. Suicide attempt rates are elevated among adolescents who have been exposed to childhood physical abuse (Shaunesey, Cohen, Plummer, & Berman 1993). But, as Beautrais, Joyce, and Mulder (1996) point out, it is likely that those who experience physical
abuse are situated within families where they are exposed to a number of other adverse experiences. Thus, the authors posit that more research is needed in this area that controls for these confounding factors. Likewise, those who have been exposed to childhood sexual abuse are at an increased risk for suicidal behaviour (Anda et al. 2002; Fergusson & Lynskey 1996). In fact, those who report sexual abuse involving intercourse are approximately twelve times more likely to attempt suicide (Sher & Zalsman 2005). Interestingly, few quantitative analyses take physical and/or sexual abuse into account as a control variable when studying adolescent suicide ideation.

Peer Relationships

Relationships with peers are particularly important during the period of adolescence (Au, Lau, and Lee 2009). It is a period when individuals shift their sole dependence on parents for emotional support, and begin to rely on peers (East 1987). Peers have the ability to provide companionship and constructive feedback, foster a sense of belonging, and support appropriate social behaviours (Blos 1967). These particular functions serve to aid in the healthy development of self and identity (Erikson 1968). Likewise, those with strong peer support networks have greater resiliency in the face of major life changes (East 1987). As such, many scholars have documented an association between difficulties with peers, peer rejection, or the absence of peers and adolescent suicide ideation (ex. Allen 1987; Dubow et al. 1989; Lewinsohn, Rohde, & Seely 1993; Tishler, McKenry, & Morgan 1981). Thus, peer relationships are commonly used as control variables when studying various aspects of adolescent suicide ideation (ex. Au, Lau, & Lee 2009; Bjarnason & Thorlindsson 1994; Buddeberg, Buddeberg-Fischer, Schmid, & Christen 1996; Eskin 1995; Howard-Pitney 1992; Kaltiala-Heino 1999; Kaminski, Puddy, Hall, Cashman, Crosby, et al. 2010; Pisani, Schmeelk-Cone, Gunzler, Petrova, & Goldston 2012).
Conclusion

This chapter has provided an overview of both the theoretical approaches used in this thesis, as well as a review of the important literature that has informed this thesis research and provided the context within which to situate it. In sum, the literature on adolescent suicide ideation largely adopts an ecological framework, considering the influences from the macro-, exo-, meso-, and microsystems, and how these influences interact with personal characteristics. I have pointed to Karl Marx’s notion of alienation as the key societal process through which students become disengaged from school. Likewise, I have outlined the key sociodemographic factors that influence the likelihood that a student will experience suicide ideation as a result of this disengagement. Accordingly, I now turn to Chapter Three, where I will discuss the research methodology employed in this thesis.
CHAPTER THREE: METHODOLOGY

Introduction

This thesis research uses a quantitative analysis to answer the following question: *In what ways does school disengagement affect American adolescents’ likelihood of experiencing suicide ideation?* First, I will discuss the source of the data used for the statistical analysis, followed by a detailed explanation of the specific sample included in the study. I will then provide an overview of the variables used, and how they are operationalized. Finally, I will discuss the specific analytic procedure I employ for this study.

Data

This thesis research employs data from the 2011 National Survey on Drug Use and Health (NSDUH), Cycle 31 public use microdata file. The NSUDH is sponsored by the U.S. Department of Health and Human Services. The primary purpose of the NSDUH is to measure the prevalence and correlates of drug use among citizens of the United States. Specifically, this survey employs a sample of 70,109 respondents, representative of the non-institutionalized civilian population aged 12 and older from all 50 states and the District of Columbia. Data collection for the 2011 NSUDH involved a combination of computer-assisted personal interviewing (CAPI), computer-assisted self-interviewing (CASI), and audio computer-assisted self-interviewing (ACASI). This survey had weighted screening response rate of 86.98 %, and a weighted interview response rate of 74.38 %. Missing data were dealt with using three statistical imputation methods. For selected variables, logical inference was used to replace missing responses. For some demographic variables, imputation via the unweighted “hot-deck” technique was used. Finally, missing data for many other variables involved imputation through predictive mean neighbourhoods (PMN), a new procedure which, according to the authors, was developed.
specifically for this survey. Because the estimates yielded by the 2011 NSDUH are based on sample survey data rather than complete data for the entire population, a weight variable is used in the statistical analysis to obtain estimates of the unknown population parameters. The survey includes a series of questions geared specifically to the adolescent population (aged 12-17). The data analysis used in this thesis will examine some of these questions and focus exclusively on this adolescent population.

The Sample

The 2011 NSDUH classifies “adolescents” as those aged 12-17, and includes a series of survey questions that were asked specifically to this age group. Thus, in maintaining consistency with this definition, the sample used in the present study draws from this group of 19,264 survey respondents labelled “adolescents.” To be included in the sample, adolescents had to have met three distinct criteria, described below.

First, as this study examines the relationship between school disengagement and suicide ideation, the sample had to include only those who were actually enrolled in school and could speak to that experience. Thus, those who were enrolled in any type of schooling (public or private) at the time of the survey were included in the sample. This criteria led to a narrowed-down sample of 17,966 adolescents.

Second, only 3,071 out of these 17,966 respondents were permitted to answer the survey questions regarding suicide ideation (a detailed explanation of which respondents were entitled to answer these questions, and why, is provided in the discussion that follows).

The questions regarding school engagement ask respondents to reflect upon the last 12 months of their schooling experience exclusively. However, the questions regarding suicide ideation ask respondents to reflect upon their entire lives; they are asked to think about the most
recent time in which they had a prolonged period of emotional distress and whether or not they experienced suicide ideation as a result. To be able to draw correlations between school disengagement and suicide ideation, it is necessary to examine experiences from the same time period. Thus, the third criterion was that a respondent’s period of prolonged emotional distress, and accompanying suicide ideation (if applicable), had to have occurred within roughly the last 12 months of their schooling experience.

The resultant sample of 1427 adolescents thus includes those who: were enrolled in school at the time of the survey; answered the questions regarding suicide ideation; and in answering the questions on suicide ideation, were referencing experiences they had within approximately the last 12 months of their schooling experience.

**Measures**

*Dependent Variable*

The present study examines the relationship between the key independent variable, school disengagement, and the dependent variable, suicide ideation. The contributing factors to suicide ideation are particularly important to uncover given the prevalence of this condition among the adolescent population. To reiterate, approximately 15-25% of adolescents experience suicide ideation at some point during their adolescent years (Grunbaum et al. 2004). Likewise, because suicide ideation logically precedes suicidal acts, preventing suicide ideation in the first place is an effective way to lessen the occurrence of suicidal death (de Man & Le Duc 1995).

As previously mentioned, only a select group of 2774 adolescents answered the survey questions regarding suicide ideation. Respondents had to have provided a specific sequence of answers to a series of questions about their mental health in order to arrive at the suicide ideation questions. The authors note that these mental health questions were informed by the Diagnostic
and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV). A detailed breakdown of the necessary sequencing of answers is provided in Appendix B. Overall, the purpose of this careful selection process is to help paint a more accurate picture of suicide ideation among the adolescent population. It helps to ensure that, for example, fleeting, passing thoughts of suicide as a result of a brief hormonal episode are not included in the statistics on adolescent suicide ideation. Rather, here the authors target those who experienced suicide ideation as a response to a particular emotional hardship lasting two weeks or longer that impeded on their daily thoughts, activities, and/or general functioning. Thus, what is constant among this sample is that all respondents have experienced a period of depression or severe emotional distress. Holding this constant, we are now able to examine what other factors impact the likelihood of experiencing suicide ideation independent of the effect of depression or emotional distress.

The 2011 NSDUH asked, to those who were permitted to answer, three questions about thoughts of death and/or suicide ideation:

a. Did you often think about death, either your own, someone else's, or death in general?

b. During that period, did you ever think it would be better if you were dead?

c. Did you think about committing suicide?
   i. Did you make a suicide plan?
   ii. Did you make a suicide attempt?

Those who answered “yes” to any of the above questions were assigned a positive response to the symptom of “Recurrent Thoughts of Death or Recurrent Suicide Ideation.” Using this mode of classification, 70.36% experienced “Recurrent Thoughts of Death or Recurrent Suicide Ideation”, while 29.64% did not.
The measure of suicide ideation used in the present study is an adaptation of the original conceptualization put forth by the 2011 NSDUH. Here, those who answered “yes” exclusively to the first question (*Did you often think about death, either your own, someone else's, or death in general?*) were assigned a negative response to the symptom of suicide ideation, instead of the positive one they would have been assigned originally. The reason for this reconceptualization is that, although the criteria put forth by the 2011 NSDUH for the suicide ideation symptom is informed by the DSM-IV, there is no distinction made among recurrent thoughts of one’s death, or recurrent thoughts of someone else’s death, or recurrent thoughts of death in general. An extensive review of the literature on suicide ideation does not indicate that thinking about someone else’s death, or death in general, is symptomatic of suicide ideation. Thus, I contend that this particular survey question is an invalid measure of suicide ideation. To improve the quality of this clustering of questions as a measure of suicide ideation, those who answered “yes” to the first question, and “no” to the remaining two questions, were assigned a negative response to the suicide ideation symptom. Otherwise, all other cases were kept in the same response categories.

For this study, I coded those who experienced suicide ideation as 1, and those who did not as 0. For a complete summary of the coding for the dependent variable, as well as the main independent and control variables, please see Appendix C. With this new suicide ideation criteria established, 57.39% of the sample experienced suicide ideation, while 42.61% did not, which reveals a more equally distributed response set. This reconceptualization of the criteria for the suicide ideation symptom also led to modest changes in the distribution of who exhibited and who did not exhibit the symptom within some of the sociodemographic variables. In sum, there were no major changes among the school engagement variables; those who experienced suicide
ideation were distributed much the same way across the different responses for each variable. The distribution across the different age, sex, race/ethnicity, family income, availability of general support, and parental composition categories remained virtually the same as well.

Where changes occurred, however, were within the availability of parental support, and alcohol use variables. When using the 2011 NSDUH conceptualization of suicide ideation, among those who had the symptom, there was virtually an even split between those who had (50.15 %) and those who did not have (49.84 %) available parental support. However, after reconceptualising suicide ideation, among those who had the symptom, slightly more respondents did not (52.39 %) have available parental support than those who had it (47.61 %). This particular distribution aligns with trends in the literature that suggest that lack of parental closeness and support is related to suicidal behaviour (Dubow et al 1989; Maris 1981; Sands and Dixon 1986). Likewise, those who had the suicide ideation symptom under the 2011 NSDUH classification drank alcohol an average of 13.7 days out of the past year, compared with 14.9 days for those who did not have the symptom. In contrast, those who had the suicide ideation symptom under the adjusted classification drank alcohol an average of 14.4 days out of the past year, compared with 13.5 days among those who did not have the symptom. The literature suggests that alcohol use is associated with suicidal thoughts (Borges and Rosovsky 1996; Brent et al. 1999; and Schilling et al. 2009). Thus, the latter distribution aligns more with the existing literature, such that we would expect average alcohol use to be higher among those who experienced suicide ideation than among those who did not. In sum, the reconceptualization of the dependent variable, suicide ideation, led to modest changes in the distribution of those who experienced suicide ideation across the different independent and control variables. Largely, the
distribution of those with and without the suicide ideation symptom across these variables remained the same, but changed slightly for the parental support and alcohol use variables.

*Independent Variables*

**School Engagement**

As discussed in Chapter Two, school disengagement has been linked to a number of negative outcomes, including general delinquency, drug use, jeopardized academic achievement, school dropout, and decreased life satisfaction. However, limited research explores the relationship between school disengagement to adolescent suicide ideation (Carter et al. 2007; Leslie et al. 2010; Young, Sweeting, and Ellaway 2011). Accordingly, this study seeks to add to this literature, based on Fredericks et al.’s (2004) widely-accepted three-part conceptualization of school engagement. The seven survey questions below from the 2011 NSDUH tap into the respondents’ levels of behavioural, emotional, and cognitive engagement:

1. **Academic Achievement**

   The first measure of school engagement used in the present study is academic achievement, derived from the following survey question: *What were your grades for the last semester or grading period you completed?* Respondents chose one of the following options to best describe their most recent average grade: “A+, A, or A-” average (1); “B+, B, or B-” average (2); “C+, C, or C-” average (3); and “D” or Less than D average (4).

2. **Perceived Meaningfulness of Curriculum**

   Survey respondents were asked the following question to assess their perceived meaningfulness of their school curriculum: *During the past 12 months, how often did you feel that the school work you were assigned to do was meaningful and important?* Respondents
answered this question using a Likert-type scale, and responses were coded as follows: Always (1); Sometimes (2); Seldom (3); and Never (4).

3. Perceived Importance of Curriculum

To assess adolescents’ perceived importance of their school curriculum, respondents were asked the following question: *How important do you think the things you have learned in school during the past 12 months are going to be to you later in life?* Likert-type responses were received from the respondents and coded as follows: Very Important (1); Somewhat Important (2); Somewhat Unimportant (3); and Very Unimportant (4).

4. Level of Interest in Curriculum

Respondents were also asked to report their level of interest in school curriculum with the following question: *How interesting do you think most of your courses at school during the past 12 months have been?* Likert-type responses were also received for this question, and coded as follows: Very Interesting (1); Somewhat Interesting (2); Somewhat Boring (3); and Very Boring (4).

5. Positive Feedback from Teachers

The best available measure of the respondents’ relationships with their teachers was derived from the following survey question: *During the past 12 months, how often did your teachers at school let you know when you were doing a good job with your school work?* Respondents answered using a Likert-type scale, with responses coded as follows: Always (1); Sometimes (2); Seldom (3); and Never (4).
6. Involvement in Extra-Curricular Activities

To assess level of extra-curricular involvement, respondents were asked the following question: *During the past 12 months, in how many different kinds of school-based activities, such as team sports, cheerleading, choir, band, student government, or clubs, have you participated?* Responses were coded as follows: None (0); One (1); Two (2); and 3 or more (3).

7. Overall Feelings about Going to School

The final measure of school engagement used in this analysis is a general indicator of the respondents’ overall feelings about school, derived from the following question: *Which of the statements below best describes how you felt overall about going to school during the past 12 months?* Likert-type responses were received and coded as follows: you liked going to school a lot (1); you kind of liked going to school (2); you didn’t like going to school very much (3); and you hated going to school (4).

**School Engagement Scale**

The response options for all of the above questions (except involvement in extra-curricular activities) are similarly oriented: “1” indicates an extreme positive response, and “4” indicates an extreme negative response. As such, a simple recoding of extra-curricular involvement to have its responses flow in the same direction was conducted. Results from the seven survey questions were then combined to create an overall school engagement scale. Respondents were assigned a score ranging from 7 to 28; “7” indicates that a response of “1” was provided for all 7 questions (highly engaged), and “28” indicates that a response of “4” was provided for all 7 questions (highly disengaged).
To assess the reliability of this school engagement scale, a Cronbach’s alpha test was conducted using Stata software. This particular test is the most widely-used reliability estimate (Carmines & Zeller 1980). In brief, Cronbach’s alpha coefficient indicates the degree of internal consistency among the different items in a scale. As all of the items in a scale are meant to measure the same thing, they should be highly correlated with one another (Bland & Altman 1997). For example, as interest in curricular content increases, it logically proceeds that a student’s grades would increase, as well as their overall feelings about school. Therefore, using these three items as a measure of school engagement should, theoretically, make sense.

As the average correlation among the scale items increases, the alpha value increases as well. Values range from 0 (scale items are unrelated) to 1 (scale items are perfectly correlated) (Carmines & Zeller 1980). It is widely established that an alpha value ranging from 0.70 to 0.90 renders a scale adequate for statistical analysis (Bland & Altman 1997; Lehman, O’Rourke, Hatcher, & Stepanski 2013; Nunally 1978). The school engagement scale used in the present study rendered a reliability coefficient of 0.7073. This indicates that the seven scale items are adequately correlated with one another, and can therefore be conceptualized as measuring the same thing. Thus, we can conclude that this particular scale derived from seven 2011 NSDUH survey items is a reliable measure of school engagement.

Control Variables

Demographic Characteristics

In the present study, age, sex, race/ethnicity, and family income were used as demographic control variables. As discussed in Chapter Two, these demographic characteristics affect the likelihood of an adolescent experiencing suicide ideation in different ways. In sum, those in mid- to late-adolescence are more likely to experience suicide ideation than younger
adolescents (Nock et al. 2008), but this trend is dependent on sex; females are nearly twice as likely to experience suicide ideation (Carnetto 1997; CDC 2002), with rates peaking around mid-adolescence, and peaking around late adolescence for males (Boeninger et al. 2010).

Accordingly, this study includes a variable to account for any possible interaction effect between age and sex. For this analysis, age is a continuous variable ranging from 12 to 17, and sex was coded such that male = 1, and female = 0.

Adolescents’ race/ethnicity also affects their likelihood of experiencing suicide ideation. As previously mentioned, research on this topic varies considerably; however, there appears to be consensus on the following: Aboriginal youth are more likely than all other racial or ethnic groups to experience suicide ideation, and African American youth are less likely to experience suicide ideation than are Caucasian adolescents (Anderson and Smith 2003; Clarke et al. 2008; Garlow et al. 2005). In this study, race/ethnicity is a categorical variable coded as follows: White/Caucasian (1); Black/African American (2); Native American/Alaskan Native, Native Hawaiian/Pacific Islander, Asian, Multiple Race (3); and Hispanic (4).

The final demographic variable used in this study is family income. In Chapter Two, the effect of socio-economic status on suicide ideation was discussed; most notably, that a high SES can buffer suicide ideation (Lee, Myung-II, and Park 2013). Here, family income was the closest indicator of family socio-economic status available in the 2011 NSDUH. Family income is treated as a quantitative variable in the data analysis because it is conceptually continuous. It is categorized as follows: less than 10 000 (1); 10 000 – 19 999 (2); 20 000 – 29 999 (3); 30 000 – 39 999 (4); 40 000 – 49 999 (5); 50 000 – 74 999 (6); and 75 000 or more (7).
Emotional Support – In General and From Parents

A measure of emotional support in general (from anyone) available to adolescents is used in this study. This survey question asked adolescent respondents: If you wanted to talk to someone about a serious problem, which of the following people would you turn to? A list of options was given to respondents, following the first option which was: There is nobody I can talk to about serious problems. This particular answer option was used to gain a general understanding as to whether or not the respondent has some form of emotional support. If a response was entered (no, I do not have anybody I can talk to), that respondent was coded 0, and those who did not enter a response (yes, I do have someone I can talk to), were coded 1. Thus, 1 = yes, 0 = no. As discussed in Chapter Two, having emotional support from both peers and parents is an important buffer against suicide ideation (Allen 1987; Dubow et al 1989; Lewinsohn, Rohde, and Seely 1993; Maris 1981; Sands and Dixon 1986; and Tishler et al. 1981). Among the options of who respondents can turn to when they need to talk about a serious problem, peers were not included. Thus, although these data do not allow us to see the effect of peer support on suicide ideation, I posit that having a sense of their general availability of emotional support – who ever that may be – is important to consider and include in this analysis.

Accordingly, “My Mother/Father/Guardian” was listed as one of the options that respondents could choose in response to the question: If you wanted to talk to someone about a serious problem, which of the following people would you turn to? If a response was entered (yes, I can talk to my mother/father/guardian about serious problems), a code of 1 was given. If a response was not entered (no, I cannot talk to my mother/father/guardian about serious problems), a code of 0 was given.
Parental Composition

As discussed in the literature review, adolescents from non-traditional home environments or ones in which a disruption in the parental relationship occurred are at an increased risk of experiencing suicide ideation (Amato 1993; Ang and Ooi 2004; Anda et al. 2002; Gould et al. 1998; and Sher, Oquendo, and Mann 2001). The closest measure of family structure provided in the 2011 NSDUH asked respondents to report who they live with. Four categories were derived and coded as follows: lives with both parents (1); lives with just mother (2); lives with just father (3); and lives with neither mother nor father (4).

Alcohol Use

The final control variable used in this study is alcohol use. As previously discussed, there is a strong positive association between alcohol use and the likelihood of an adolescent experiencing suicide ideation (Borges and Rosovsky 1996; Brent et al. 1999; and Schilling et al. 2009). Survey respondents were asked to report the number of days that they used alcohol in the last 12 months. For this analysis, alcohol use is a continuous variable ranging from 0 to 365.

Method of Analysis

Since the dependent variable – suicide ideation – is binary, logistic regression is the most appropriate method of analysis to employ for this research. Two models will be conducted in the present study. In each model, the results will indicate if, and to what extent, school disengagement affects the likelihood of experiencing suicide ideation during periods of severe emotional distress or depression – controlling, and not controlling for – a number of socio-demographic factors. The first model will regress the dependent variable (suicide ideation) on the school engagement variable exclusively. The second model will add in all of the control
variables. I now turn to the next chapter, where I will summarize both the descriptive results of the sample respondents, and the results of the two logistic regression models.
CHAPTER FOUR: RESULTS

Descriptive Results

The descriptive statistics are provided in Table 1. Of the total 1427 respondents, 57.39% reported having experienced suicide ideation when going through a period of severe emotional distress and/or depression within the last 12 months. Respectively, 42.61% of the respondents did not experience suicide ideation during this time period.

The socio-demographic breakdown of the sample reveals that 66.78% of the respondents are female, and 33.22% are male. This indicates that far more females than males experienced a period of severe emotional distress and/or depression within the last 12 months. In addition, the average age of the respondents in this sample is 14.9 years. When looking at race/ethnicity, well over half of the respondents (60.34%) identify as white/Caucasian, approximately a fifth (18.64%) identify as Hispanic, and the remainder of the sample identify as black/African American (11.07%) and Native American/Alaskan Native, Native Hawaiian/Pacific Islander, Asian, and Multiple Race (9.95%). Likewise, the average yearly family income of the respondents in the sample is approximately $39 000 USD (equivalent to approximately $40 706 USD or $44 682 CAD in 2014).

In terms of the breakdown of the remaining control variables, 92.67% of the respondents indicate that they have someone to talk to about serious problems they are having, while 7.33% do not. Accordingly, a slight majority (53.57%) of the respondents indicate that they can talk to their mother/father/guardian about serious problems, while 46.43% report being unable to do so. Regarding parental composition, the majority of the respondents (66.43%) live with both their mother and father, approximately a quarter (24.18%) live with just their mother, while the remainder live with just their father (5.68%), or live with neither their mother nor their father.
Lastly, the average number of days that the respondents had consumed alcohol within the last 12 months is 14.9 days (approximately 15 days).

Among the school engagement measures, 41.53% of the respondents had an average grade of B+, B, or B- during their most recent grading period. Just over one quarter of the respondents (26.75%) had an average grade of A+, A, or A-, and another quarter (24.01%) of the respondents had an average grade within the C+, C, or C- range. The remaining 7.71% had an average grade of D+, D, D-, or below. Overall, the majority of the respondents in this sample hold moderate-to-favorable opinions about their schoolwork. Just over half (52.28%) of the respondents report that they “sometimes” felt their schoolwork was meaningful, while 22% find it to be “seldom” meaningful, and 19.48% find it “always” meaningful. Respondents largely perceive their schoolwork as being important to their later lives: 43.62% report their schoolwork is “somewhat important,” and 39.62% report it is “very important.” Likewise, over half of the respondents (53.19%) find their schoolwork “somewhat interesting,” while 20.95% find it “somewhat uninteresting” and 16.89% find it “very interesting.”

Furthermore, 44.46% of the respondents report that their teachers “sometimes” provide feedback when they are doing a good job with their schoolwork, and the distribution is almost identical for those who “always” receive positive feedback from their teacher and those who “seldom” do (23.42% and 23.77% respectively). In terms of extra-curricular participation, there exists a relatively even distribution of respondents among the different levels of participation: 34.85% participate in three or more; 23.77% participate in two; 22.02% participate in one; and 19.35% do not participate in any extra-curricular activities. Finally, the descriptive results of the respondents’ overall feelings about going to school over the last 12 months reveal that the majority (70%) have favorable feelings: 48.28% “kind of liked going to school”, and 21.72%
“liked going to school a lot.” After all seven school engagement variables were added to the school engagement scale, ranging from 7 (highly engaged) to 28 (highly disengaged), respondents in this sample had an average score of 14.9.

**TABLE 1. Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suicide Ideation</td>
<td>1427</td>
<td></td>
</tr>
<tr>
<td>Has Symptom</td>
<td>819</td>
<td>57.39</td>
</tr>
<tr>
<td>Does not have Symptom</td>
<td>608</td>
<td>42.61</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Engagement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grades for the last semester/grading period</td>
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<td></td>
</tr>
<tr>
<td>A+, A, or A- average</td>
<td>371</td>
<td>26.75</td>
</tr>
<tr>
<td>B+, B, or B- average</td>
<td>576</td>
<td>41.53</td>
</tr>
<tr>
<td>C+, C, or C- average</td>
<td>333</td>
<td>24.01</td>
</tr>
<tr>
<td>D+, D, or D- average (or below)</td>
<td>107</td>
<td>7.71</td>
</tr>
<tr>
<td>How often felt schoolwork was meaningful in the past 12 months</td>
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<td></td>
</tr>
<tr>
<td>Always</td>
<td>278</td>
<td>19.48</td>
</tr>
<tr>
<td>Sometimes</td>
<td>746</td>
<td>52.28</td>
</tr>
<tr>
<td>Seldom</td>
<td>314</td>
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</tr>
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<td>Never</td>
<td>89</td>
<td>6.24</td>
</tr>
<tr>
<td>How important thought things learned in past 12 months will be later in life</td>
<td>1426</td>
<td></td>
</tr>
<tr>
<td>Very Important</td>
<td>565</td>
<td>39.62</td>
</tr>
<tr>
<td>Somewhat Important</td>
<td>622</td>
<td>43.62</td>
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<tr>
<td>Somewhat Unimportant</td>
<td>177</td>
<td>12.41</td>
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<tr>
<td>Very Unimportant</td>
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<td>How interesting courses are at school over the past 12 months</td>
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</tr>
<tr>
<td>Very Interesting</td>
<td>241</td>
<td>16.89</td>
</tr>
<tr>
<td>Somewhat Interesting</td>
<td>759</td>
<td>53.19</td>
</tr>
<tr>
<td>Somewhat Boring</td>
<td>299</td>
<td>20.95</td>
</tr>
<tr>
<td>Very Boring</td>
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<td>8.97</td>
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<td>How often teachers provided positive feedback over the last 12 months</td>
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<td></td>
</tr>
<tr>
<td>Always</td>
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</tr>
<tr>
<td>Sometimes</td>
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<td>44.46</td>
</tr>
<tr>
<td>Seldom</td>
<td>339</td>
<td>23.77</td>
</tr>
<tr>
<td>Never</td>
<td>119</td>
<td>8.35</td>
</tr>
<tr>
<td>Number of extra-curricular activities involved in during the past 12 months</td>
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<td></td>
</tr>
<tr>
<td>3 or more</td>
<td>497</td>
<td>34.85</td>
</tr>
<tr>
<td>2</td>
<td>339</td>
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</tr>
<tr>
<td>1</td>
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<td>276</td>
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<tr>
<td>Overall feelings about going to school over the past 12 months</td>
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</tr>
<tr>
<td>Liked going to school a lot</td>
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<td>21.72</td>
</tr>
<tr>
<td>Kind of liked going to school</td>
<td>689</td>
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</tr>
<tr>
<td>Did not like going to school very much</td>
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<tr>
<td>Hated going to school</td>
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<td>School Engagement Scale (Score, 7-28)</td>
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<tr>
<td><strong>Control Variables</strong></td>
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<td></td>
</tr>
<tr>
<td>Age (Years)</td>
<td>1427</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>1427</td>
<td></td>
</tr>
</tbody>
</table>
Male 474 33.22  
Female 953 66.78  
Race/Ethnicity 1427  
White/Caucasian 861 60.34  
Black/African American 158 11.07  
Native American/Alaskan Native; Native Hawaiian/Pacific Islander; Asian; Multiple Race 142 9.95  
Hispanic 266 18.64  
Family Income 1427 ~39000(mean)  
Less than 10 000 75 5.26  
10 000 – 19 999 156 10.93  
20 000 – 29 999 169 11.84  
30 000 – 39 999 159 11.14  
40 000 – 49 999 162 11.35  
50 000 – 74 999 257 18.01  
75 000 or more 449 31.46  
General Support – There is someone I can talk to about serious problems 1391  
Yes 1289 92.67  
No 102 7.33  
Parental Support – I can talk to my mother/father/guardian about serious problems 1415  
Yes 758 53.57  
No 657 46.43  
Parental Composition 1427  
Lives with Both Parents 948 66.43  
Lives with Just Mother 345 24.18  
Lives with Just Father 81 5.68  
Lives with Neither 53 3.71  
Frequency of Alcohol Use – Number of Days in Past Year 1427 14.02(mean)  
* Due to rounding, percentages may not add up to 100

Regression Results

Table 2 provides the results of two logistic regression models, whereby suicide ideation is the dependent variable. The models are estimated in a series of stages: suicide ideation on school disengagement (Model 1); and suicide ideation on school disengagement taking into account all control variables (Model 2). Results are displayed for each independent and control variable, indicating how each of their respective categories or quantities are related to the dependent variable (suicide ideation). Specifically, the results indicate how each category or quantity increases or decreases the likelihood of a respondent falling into category “1” of the dependent variable (having suicide ideation). The results then indicate whether or not these relationships are statistically significant.

2 Recall that the suicide ideation variable was coded such that 1=yes (experienced suicide ideation), and 0=no (did not experience suicide ideation).
<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1 (N=1386)</th>
<th>Model 2 (N=1355)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>SE</td>
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<td>Constant</td>
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<td><strong>Independent Variable</strong></td>
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<tr>
<td><strong>Control Variables</strong></td>
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</tr>
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<td></td>
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<tr>
<td>Sex</td>
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</tr>
<tr>
<td>Female</td>
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</tr>
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<td>0.243</td>
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<td>No</td>
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<td></td>
</tr>
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<td>Yes</td>
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<td>0.120</td>
</tr>
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<td>---</td>
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<td>Parental Composition</td>
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</tr>
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<td>Lives with Just Father</td>
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<tr>
<td>Frequency of Alcohol Use – Number of Days in Past Year</td>
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<td>0.001</td>
</tr>
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</table>

*<0.05; **p<0.01; ***p<0.001.

*An interaction variable between sex and age was initially included in Model 2; due to its statistical insignificance it was not included in the above table*
Model 1: Regression of Suicide Ideation on School Disengagement

The first model introduces the school engagement variable without controlling for any other variables. This model demonstrates that school engagement level has a statistically significant impact on the likelihood of experiencing suicide ideation (p<0.05). The positive coefficient (0.029) indicates that as school engagement level decreases, the likelihood of experiencing suicide ideation increases. Specifically, every one unit increase on the school engagement scale increases the log odds of experiencing suicide ideation by 0.029. Converting this into an odds ratio, every one unit increase on the school engagement scale renders one 1.029 times more likely to experience suicide ideation.

Figure 3 depicts a visual representation of the relationship between school engagement and suicide ideation. Log odds estimates have been converted into predicted probabilities to provide a more clear understanding of the relationship between these two variables. Figure 3 demonstrates that those who are highly engaged in school have a 51% chance of experiencing suicide ideation, and those who are highly disengaged have roughly a 65% chance of experiencing suicide ideation. Thus, as school engagement decreases, the probability of having suicide ideation increases. It is important to note that while this relationship is statistically significant, it does lack in strength; there is only roughly a 14% difference in suicide ideation risk from one extreme end of the school engagement scale to the other.

3 Recall that the school engagement scale is oriented such that lower scores indicate higher levels of school engagement, and higher scores indicate lower levels of school engagement.
4 Odds ratios were calculated using the following formula: \( e^b \), where \( b \) = the coefficient for the particular variable or category being examined.
5 See Appendix D for formulas used to calculate predicted probabilities.
Model 2: Regression of Suicide Ideation on School Disengagement and all Control Variables

The second model integrates all of the control variables in addition to the school engagement variable. This model reveals two statistically significant predictors of suicide ideation: sex, and availability of parental support. Otherwise, the remaining control variables in this model are not statistically significant predictors of suicide ideation.

While race/ethnicity, namely, being Hispanic, is a statistically significant predictor of suicide ideation according to Model 2, a test of the overall statistical significance of the race/ethnicity parameter revealed that it is not in fact a statistically significant predictor of suicide ideation. Therefore, this variable is excluded from the discussion of the key predictor variables found in Model 2.

Sex has a statistically significant impact on the likelihood of experiencing suicide ideation (p<0.01). As the reference category for the sex variable is “female”, the sex coefficient indicates that being male decreases the log odds of experiencing suicide ideation by 0.311. This
relationship is alternatively expressed with an odds ratio, such that the male to female likelihood of experiencing suicide ideation is 0.732:1.

Availability of parental support is the final variable in this model that has a statistically significant impact on the likelihood of experiencing suicide ideation (p<0.001). Having a parent to talk to about emotional problems, versus not having one (the reference category), decreases the log odds of experiencing suicide ideation by 0.435. In other terms, there is a 0.647:1 having parental support to not having parental support odds ratio of experiencing suicide ideation.

Figures 4 and 5 provide visual representations of the relationship between suicide ideation and sex, and suicide ideation and availability of parental support, respectively. Again, log odds estimates have been converted into predicted probabilities for ease of understanding. Figure 4 reveals the percentage difference in the likelihood of experiencing suicide ideation between males and females, and Figure 5 reveals the percentage difference in likelihood of experiencing suicide ideation between those who have available parental support and those who do not. These predicted probabilities were calculated holding all quantitative variables constant at their means, and all categorical variables constant at each of their respective categories that had the highest proportion of responses.\(^6\) Doing so allows us to see the effect of the two predictor variables on those with the most “typical” case in the sample. In sum, being male decreases a respondent’s likelihood of experiencing suicide ideation by 7%, and those with available parental support are 11% less likely to experience suicide ideation than those who do not have available parental support.

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\(^6\) As such, variables were held constant at: school engagement level of 14.9; aged 14.9 years; female; white/Caucasian; family income of $39 000; has available support in general; has available parental support; lives with their both mother and father; and drank alcohol 14.02 days over the past year.
FIGURE 4. Predicted Probabilities of Experiencing Suicide Ideation by Sex

FIGURE 5. Predicted Probabilities of Experiencing Suicide Ideation by Availability of Parental Support
Regarding the main independent variable, school engagement, Model 2 demonstrates that after accounting for all of the control variables, school engagement is no longer a statistically significant predictor of suicide ideation. Rather, the once-established relationship between school engagement and suicide ideation has become attributable to other variables in the model. In order to decipher exactly which control variable(s) affect(s) the statistical significance of the relationship between school engagement and suicide ideation, a series of regression models were performed, regressing suicide ideation on school engagement and each control variable individually. Results from this series of regressions revealed that both race/ethnicity and availability of parental support increased the p-value of the school engagement variable to a level at which it became statistically insignificant. Race/ethnicity and availability of parental support each increase the p-value of school engagement individually, and when included together in a model, generate an even greater increase in the p-value of school engagement. 7,8 Because race/ethnicity is not a statistically significant predictor of suicide ideation, the focus is on the effect that availability of parental support has on diminishing the statistical significance of school engagement as a predictor of suicide ideation. Therefore, the relationship between school engagement and suicide ideation appears to be somehow attributable to availability of parental support.

7 The p-value of the school engagement variable was increased from 0.044 to 0.077 when adding the race/ethnicity variable; 0.253 when adding the availability of parental support variable; and 0.387 when adding both the race/ethnicity and availability of parental support variables.

8 The relationships between school engagement and race/ethnicity, and school engagement and availability of parental support are not attributable to multicollinearity, as both race/ethnicity and availability of parental support are categorical variables. These relationships are not due to interaction effects either; interaction variables were created and added to Model 2, rendering no statistically significant results.
Conclusion

School engagement is a statistically significant predictor of suicide ideation in the absence of sociodemographic controls. This relationship becomes statistically insignificant when controlling for sex, age, family income, race/ethnicity, alcohol use, availability of parental support, availability of support in general, and parental composition. Specifically, the inclusion of the race/ethnicity and availability of parental support variables diminishes the statistical significance of school engagement as a predictor of suicide ideation. However, the race/ethnicity variable as a whole is not a statistically significant predictor of suicide ideation. Thus, it is the variation in availability of parental support that accounts for the changes in suicide ideation risk that were once thought to be attributable to school engagement. Sex is also a statistically significant predictor of the dependent variable, such that females are more likely than males to experience suicide ideation. Given these results, I now turn to Chapter Five where I will discuss the meanings of these findings, situate them within the broader literature, and provide suggestions for future research.
CHAPTER FIVE: DISCUSSION AND CONCLUSION

The consequences of school disengagement during the period of adolescence are worthy of scholarly attention. As discussed in Chapter Two, schools are essential social contexts for adolescent development (Baker 1998; Rutter & Meghan 2002). Adolescents spend approximately half of their waking hours at school (Smith, Boutte, Zigler, & Finn-Stevenson 2004), and during those hours they are subject to processes of socialization that reinforce broader societal norms, values, and mores (Durkheim 1956; Gottfredson 2001; Hirschi 1969). Likewise, statistical analyses have revealed that school-related variables have the ability to affect adolescent behaviour independently of individual-level variables (i.e. age, sex, socioeconomic status, etc.) (Gottfredson 2001). As such, scholars have identified several negative outcomes that can arise as a result of school disengagement. These include, but are not limited to: general delinquency (ex. Bender 2012; Hirschfield & Gasper 2011); drug use (ex. Bond et al. 2007; Li & Lerner 2011), low academic achievement (ex. Dotterer & Lowe; Wang & Peck 2013); dropping out (Alexander, Entwisle, & Kabbani 2001; Archambault et al. 2009; Henry, Knight, & Thornberry 2012); and decreased life satisfaction (Lewis et al. 2011).

Likewise, a small body of literature examines the relationship between school disengagement and adolescent suicide ideation (ex. Carter et al. 2007; Leslie et al. 2010; Young, Sweeting, & Ellaway 2011). This literature is not only limited in scope, but reveals a number of research gaps as well. First, school disengagement is rarely used as the main independent variable of interest in studies of adolescent suicide ideation. Second, the studies that do use school disengagement as the main predictor variable often do not take into account the various types of engagement posited by Fredericks et al. (2004), which include behavioural, emotional, and cognitive forms of engagement. Finally, limited research has been conducted on North
American adolescents, and even less research has examined a representative sample of the general adolescent population. As such, the present study sought to address these research gaps by examining the relationship between school disengagement and suicide ideation through the use of a school engagement scale based on Fredericks et al.’s three types of engagement and applying it to a nationally representative sample of American youth. This study used logistic regression analysis to examine the ways in which school disengagement increases or decreases the likelihood of experiencing suicide ideation, controlling for sex, age, race/ethnicity, family income, availability of emotional support in general, availability of emotional support from a parent/guardian, parental composition, and alcohol use.

**Discussion of Findings by Theme**

_School Disengagement and the Influence of Parental Support_

The findings of this study reveal that school engagement is a statistically significant predictor of adolescent suicide ideation without controlling for any sociodemographic variables. The relationship between school disengagement and suicide ideation is such that as levels of engagement decrease, the likelihood of experiencing suicide ideation during periods of severe emotional distress and/or depression increases. Specifically, being highly disengaged in school, versus highly engaged, increases an individual’s likelihood of experiencing suicide ideation by approximately 14%. This finding is similar to Young, Sweeting, & Ellaway’s (2011) conclusions that school disengagement accounted for a 15-18% increase in the probability of being classified as “at risk for suicide”. This finding is also consistent with Carter et al.’s (2007) and Leslie et al.’s (2010) conclusions that school disengagement increases the risk of suicide ideation and suicidality at large.
However, school disengagement is no longer a statistically significant predictor of suicide ideation when controlling for availability of parental support. Availability of parental support is a statistically significant predictor of suicide ideation insofar as having a parent to talk to about serious problems decreases an individual’s likelihood of experiencing suicide ideation by approximately 11%. This finding is consistent with Dubow et al.’s (1989), Maris’ (1981), and Sands and Dixon’s (1986) findings that lack of parental closeness and support are associated with adolescent suicidal behaviour. The fact that school disengagement is no longer a statistically significant predictor of suicide ideation when controlling for availability of parental support suggests that the effect of school disengagement on suicide ideation can be explained in part by whether or not the respondents have supportive parents.

This finding possibly suggests that there are differences in the sociodemographic makeups of those who tend to be engaged, versus those who tend to be disengaged, and it is these sociodemographic characteristics that help explain the variance in suicide ideation risk, in addition to school engagement. This suggests that those who have available parental support tend be more engaged in school than those who do not have this type of support. To test this hypothesis, the mean school engagement scores were calculated for those with and without parental support. The results of these calculations reveal that those with available parental support do have a higher average school engagement score than those without parental support (14.25 and 15.73 respectively).9

Therefore, this study reveals two important findings regarding school disengagement and availability of parental support. First, those with parental support are less likely to experience suicide ideation than those who do not have parental support. Second, those with

9 Recall that lower scores indicate higher levels of engagement, and higher scores indicate lower levels of engagement.
parental support have higher average levels of school engagement than those who do not have parental support. Thus, those who have parental support tend to be more engaged in school, and have a lower likelihood of experiencing suicide ideation. Since school engagement is no longer a statistically significant predictor of suicide ideation when controlling for availability of parental support, parental support is a better predictor of suicide ideation than school engagement. It is possible to conclude from these findings that we are better able to predict an adolescent’s likelihood of experiencing suicide ideation not only by their school engagement level, but also by whether or not they have a parent to turn to for emotional support.

**Sex as a Predictor of Suicide Ideation**

Among the other sociodemographic variables, sex is a statistically significant predictor of suicide ideation, such that being female increases an individual’s likelihood of experiencing suicide ideation by approximately 7% when controlling for all sociodemographic variables. This finding is consistent with the Centers for Disease Control’s (2002) finding that females are more likely to engage in suicidal behaviour than males. It is also important to highlight the descriptive statistics regarding sex in this study. To reiterate, to be included in the sample, respondents had to have gone through a period lasting two weeks or more of severe emotional distress and/or depression. That 66.78% of the sample respondents were female indicates that far more females experienced severe emotional distress and/or depression than males. This finding is consistent with Allison’s (2001) assertion that the prevalence and severity of depression is higher for adolescent females than adolescent males. Thus, this study supports the literature that positions sex as an important predictor of both emotional distress/depression and suicide ideation.
School Disengagement: An Ongoing Issue

In addition to the regression results of this study, the descriptive results regarding the school engagement variable are worth highlighting. As previously discussed, the average school engagement level in this sample is 14.9 on a scale of 7 to 28. If we conceptualize having a score of 7 as being 100% engaged in school, then a score of 14.9 is the equivalent of being approximately 62.08% engaged in school. This percentage is the equivalent of a “C Minus” letter grade. Thus, the respondents in this sample have a fairly low level of school engagement. It is important to note that the respondents in this sample have all gone through a period of severe emotional distress and/or depression. As such, these results may not be indicative of the state of school engagement levels across all adolescents; rather, this relatively low average engagement level may be symptomatic of adolescents undergoing emotional distress and who have lower levels of happiness. Future research should seek to uncover if there are trends in school engagement levels according to mental well-being and/or happiness levels among adolescents, and attempt to uncover the directionality of this relationship. Nonetheless, this finding helps support the positioning of school disengagement as a relevant issue among today’s American adolescents.

Theoretical Implications

The findings of this study can be explained using Ecological Systems Theory. Suicide ideation risk is affected by the interrelated workings of the school and the family, two important elements of the adolescent microsystem. This relationship is then further affected by two individual-level factors: sex, and mental well-being.\textsuperscript{10} Thus, in accordance with Ecological Systems Theory, different facets of the ecological system are working together to influence

\textsuperscript{10} Recall that all respondents in the sample have experienced a period of severe emotional distress and/or depression; thus, this individual-level factor has been taken into account as it undoubtedly affects the likelihood of experiencing suicide ideation.
human development and behaviour. Likewise, as previously discussed, the relatively low average level of school engagement in this sample (62.08%) indicates that school disengagement is an ongoing issue. There continue to be processes at work that disconnect students – emotionally, behaviourally, and cognitively – from their schools. As such, school disengagement is not an outdated notion. Thus, theories that attempt to highlight the ways in which contemporary education fails to meet the needs of students (in this case, theories of alienation) are not only still relevant, but necessary as well.

As discussed in Chapter Two, I have posited that being alienated from school results in school disengagement. I support this assertion by drawing parallels between Mau’s descriptions of the ways in which social estrangement, powerlessness, normlessness, and meaninglessness (the four dimensions of alienation) manifest, and Fredericks et al.’s (2004) three types of school engagement: behavioural, emotional, and cognitive. To reiterate, social estrangement manifests in the form of refraining from social activities within the school environment, which is indicative of components of both behavioural and emotional disengagement. Students respond to feelings of powerlessness by acting out or cutting class, which are examples of behavioural disengagement. Likewise, students respond to a sense of meaninglessness by thinking and behaving in ways that lack concern for how their present actions will impact their future lives, which is indicative of both behavioural and cognitive disengagement. Finally, normlessness manifests in the form of rebelling and challenging the authority of school officials, which is symptomatic of both behavioural and emotional disengagement.

If the study sample had a high average level of school engagement, it would imply that students are not displaying symptoms of alienation, and that theorizing about the alienating
nature of schooling would be inappropriate. However, because the respondents in the sample have an average school engagement level that is quite low, it is permissible to assert that students continue to be subject to alienating practices within schools. This indicates that theories of alienation are still applicable to the contemporary school context despite ongoing efforts to improve curriculum design and delivery. Thus, theories of alienation cannot be discounted or regarded as outdated in the context of schooling.

In addition, the findings from the logistic regression analyses pose some interesting implications for theories of alienation. As discussed in Chapter Two, alienation is context-specific, such that individuals are never in a general state of alienation; rather, individuals experience alienation differentially depending on the social context in which they are situated. With this in mind, recall that the findings of this study have suggested that those with parental support have higher average levels of school engagement than those without parental support. Students who do not have parental support experience lower engagement levels and are therefore displaying more symptoms of school alienation. This might suggest that alienation from the home compounds the effect of alienation from the school context. Those with unsupportive, uninvolved parents may have a more difficult time navigating the alienating structures and processes at school. This notion becomes particularly interesting when considering the other key findings from this study that those without parental support and those who are female are at an increased risk of experiencing suicide ideation. Taken together, these findings might indicate that alienation from the home compounds the effect of alienation from the school context, and these multiple experiences of alienation make adolescents – particularly females – more susceptible to suicide ideation during periods of emotional distress. Thus, future research should explore the possible compounding effect of the experience of alienation from multiple social contexts.
Policy Implications

School disengagement continues to be a relevant issue among American youth. This is evident in the array of negative outcomes that have been linked to school disengagement in the literature to date, and in the present study, not only was it found to be a predictor of adolescent suicide ideation, but the average engagement level among this sample turned out to be quite low. Therefore, efforts to increase school engagement levels among American adolescents are still needed. But because the effect of school disengagement on suicide ideation is mediated by parental support, efforts to reduce rates of suicide ideation among youth cannot be solely directed at schools. Rather, efforts to facilitate positive, supportive parent/guardian-child relationships are needed as well.

There is something particularly important about the parent-child relationship to the developing adolescent. The inability to rely on parents for emotional support not only leaves the adolescent with the burden of carrying their problems around with them (Orbach 1986), but it can invoke feelings of hopelessness and low self-worth as well (Prinstein, Boergers, Spirito, Little, & Grapentine 2000). Laursen and Collins (2009) assert that among adolescents, relationships with parents are the most influential of all of their relationships in shaping life’s most important decisions. The authors note that relationships with people other than parents, namely peers, are important influences in adolescent decision-making processes regarding the more mundane details of their lives; however, parents have the most influence over major life decisions. Laursen and Collins also add that the most important elements of the parent-adolescent bond are the emotional and psychological support aspects, as opposed to the physical support aspect and the sharing of experiences that are more important during childhood. Thus, educating parents about the importance of communicating with their teenage children and
providing them with readily-accessible resources to do so could prove valuable in lessening the occurrence of adolescent suicide ideation.

It is important to note that while parents may do everything they can to welcome discussion and offer support to their teenage children, teenagers can still refrain from talking to their parents out of discomfort or fear. Undoubtedly, there are adolescents with both physically and/or emotionally unavailable parents, which prevent them from turning to this source of support. Thus, there need to be alternative sources of emotional support and guidance readily available. In this respect, schools can play a particularly important role. Accordingly, I now turn to a discussion of a program that addresses the needs described above; this program not only educates parents about the importance of communication and emotional support with their teenaged child, but also gives teachers the tools to be able to fulfill this role for students who do not have available parental support.

The Queensland University of Technology, located in Brisbane, Australia, provides a program called the Resourceful Adolescent Program (RAP). The overall purpose of the program is to help foster resilience and positive mental health among adolescents in order to prevent depression and related difficulties. The adolescent program specifically targets self-management and self-regulation, how to cope with stress, problem-solving skills, building and accessing psychological support, and considering others’ perspectives. Accordingly, the parent program educates parents about the impact that their personal stress has on their child and how to manage it, how their parenting role needs to change in relation to the transitions their teenaged child is going through, how to help increase their child’s self-esteem, and how to maintain family harmony. Regarding the teacher program, teachers are informed about how to maintain warm, empathetic relationships with their students, how to establish mutual respect, the importance
inclusion and sense of belonging, noticing and encouraging students’ strengths, and the importance of equity and fairness. What is particularly interesting about this program is its accessibility. Instructor manuals and workbooks are readily available for those who wish to implement the program. Typically, the adolescent program is carried out in schools, where teachers or guidance counsellors use the material during health class, or offer it as an optional workshop during lunch or other break periods. The parent program is held in community settings, and the teacher program can be easily implemented as a form of professional development (Queensland University of Technology 2014). The structure of this program effectively targets the three influencing bodies of suicide ideation found in the present study: the school, the family, and individual-level factors. Thus, the implementation of a similar program in the United States might prove to be beneficial in reducing rates of suicide ideation.

Another important finding from this study is that females are not only at an increased risk for emotional distress and/or depression, but they are more likely to experience suicide ideation during these times of distress as well. It is thus important to have additional efforts put in place that specifically target the female population. Once again, schools can play a valuable role in this respect. For example, Big Brothers Big Sisters (BBBS) of Canada offers a program entitled Go Girls! to middle-school aged girls. This program is implemented by BBBS volunteers during school hours, on school property. Typically, sessions are run once per week and participants are excused from class to be able to attend. Groups usually consist of all of the girls from a particular class, so as to assure that no particular students are singled out. The purpose of this program is to teach young girls about the importance of physical activity, healthy eating, and most importantly, self-esteem. The overarching goal of the program is to help foster overall positive self-images among the participants (BBBS 2011). While the United States has a
BBBS organization, it does not offer the *Go Girls!* program. Thus, the findings of this study would support the implementation of such a program, or other programs that are similar in nature that might help to reduce the prevalence of both emotional distress/depression and suicide ideation among female adolescents.

**Limitations and Suggestions for Future Research**

**Methodological Limitations**

As discussed in Chapter Two, there are a number of sociodemographic factors that can affect the likelihood of an adolescent experiencing suicide ideation. As such, it is imperative to include these factors as control variables in studies of adolescent suicide ideation. The 2011 NSDUH provided most of the necessary control variables. However, other important control variables were not included in the dataset and are therefore missing from this analysis, including: sexual orientation of the respondent; family history of suicide; and availability of peer support. Additionally, the “sex” and “parental composition” control variables pose some limitations. Classifying and subsequently comparing the respondents on the basis of male/female sex categories fails to take into account those who are intersexed, and prevents us from exploring the effect of gender identity on suicide ideation. Likewise, the categorization of the parental composition variable represents a heteronormative ideology, failing to take into account those with two fathers or two mothers.

Furthermore, the 2011 NSDUH is a cross-sectional survey examining the United States population during the year of 2011 in isolation from other years. The impact of school disengagement on adolescent suicide ideation might be better represented with longitudinal data, where we could see the timing of the onset of suicide ideation, and compare that with school engagement over time. This would not only help to solidify the directionality of the relationship,
but it would provide more insight as to whether or not school disengagement could actually serve as a mediating variable; perhaps suicide ideation experienced in earlier years might dissipate as students become more engaged in school. Thus, I suggest that future research take this longitudinal approach. Nevertheless, the 2011 NSDUH provides a snapshot of the relationship between school disengagement and suicide ideation. Although it does not represent a complete picture of how, when, and why this relationship develops, it is still informative and can generate insight for future research on this topic.

Findings Limitations

The findings of this study, particularly with respect to the mediating role that parental support has with the relationship between school disengagement and suicide ideation, raises a few questions. The degree to which parental support explains the relationship between school engagement and suicide ideation is unclear. Likewise, while it is logical to assume that parental support facilitates school engagement, which then explains school engagement’s relationship with suicide ideation, we cannot be certain of this. It is possible that school engagement fosters better relationships with parents, and then this parental closeness works to prevent suicide ideation. Thus, future research should examine the nature of the relationship between school engagement and parental support and the specific ways in which they work together to prevent suicide ideation among adolescents. As discussed in the Methodological Limitations, this type of research would benefit from the use of longitudinal data.

Conclusion

Situated within an Ecological Systems framework, I have posited that capitalist ideologies at the macrosystem level have contributed to student alienation, and that school disengagement is the result of this process. Conceptualizing school engagement as the
culmination of behavioural, emotional, and cognitive forms of engagement based on Fredericks et al.’s (2004) work, the relationship between school disengagement and suicide ideation was explored by way of logistic regression analysis using data from the 2011 National Survey on Drug Use and Health.

The results of this study have indicated that school disengagement has a statistically significant relationship with suicide ideation, such that as students become more disengaged, they are at an increased risk of experiencing suicide ideation. However, this relationship became statistically insignificant when taking into account adolescents’ access to emotional support from parents. Those with a parent they can turn to for emotional support are less likely to experience suicide ideation. Likewise, those with parental support also tend to be more engaged in school than those without parental support. These benefits of parental support thus work to explain part of the effect of school disengagement on suicide ideation. These findings encourage future research on the ways in which school engagement and parental support interact and ultimately influence suicide ideation risk. These findings also support the implementation of school-based programs aimed at improving adolescent mental well-being, professional development opportunities to educate secondary school teachers about how to better serve as sources of emotional support for their students, and community-based programs aimed at educating parents on the importance of parent-child communication.

Likewise, this study also revealed that females are not only more likely to experience emotional distress, but they are more likely to experience suicide ideation as a result of this distress. These findings support future research that examines how and why females continue to be at this increased risk, and support the implementation of school-based programs geared to improving self-esteem and the overall mental well-being of female adolescents. In sum, this
study has identified three important risk factors of suicide ideation: being female, being 
disengaged from school, and lacking emotional support from parents. While this study raises 
rather than answers questions about how these risk factors interact, it is nevertheless a step in the 
right direction in ultimately lessening the occurrence of teen suicide.
REFERENCES


Howard, Matthew O., Brian E. Perron, Paul Sacco, Mark Ilgen, Michael G. Vaughn, Eric Garland and Stacey Freedentahl. 2010. "Suicide Ideation and Attempts among Inhalant Users: Results from the National Epidemiologic Survey on Alcohol and Related Conditions." Suicide & Life - Threatening Behavior 40(3):276-86


California School Psychologist 8:73-86


Jeon, Gyeong-Suk; Ha, Yeongmi; and Eunsook Choi. 2013. “Effects of Objective and Subjective Socioeconomic Status on Self-Rated Health, Depressive Symptoms, and Suicidal Ideation in Adolescents.” Child Indicators Research 6(3): 479-492


Wagner, Barry M.; Silverman, Mary Alice C.; and Catherine E. Martin. 2003. “Family Factors in Youth Suicidal Behaviours.” American Behavioural Scientist 46(9): 1171


SUGGESTIONS FOR A CONTEXT SPECIFIC APPROACH." *PACIFIC
SOCIOLOGICAL REVIEW* 18(2):171-193

General Psychiatry* 30: 737-746.

Wenz, Friedrich V. 1979. "Sociological Correlates of Alienation among Adolescent Suicide

Williamson, Iain, and Cedric Cullingford. 2003. “‘Everybody’s a Nobody in School’: Excluded
Students’ Perceptions of the Threats to Autonomy in the English Secondary

Young, Robert, Helen Sweeting and Anne Ellaway. 2011. "Do Schools Differ in Suicide Risk?
the Influence of School and Neighbourhood on Attempted Suicide, Suicidal Ideation and

“‘Relationships at School and Stage-Environment Fit as Resources for Adolescent

<table>
<thead>
<tr>
<th>Study</th>
<th>Definition/Measure</th>
<th>Fredericks et al. (2004) Classification</th>
</tr>
</thead>
</table>
- Measured by report card marks re: work habits, and teachers’ reports of behaviour                                                      | Behavioural                                               |
| Alexander, Entwisle, & Kabbani (2001)*        | “School Engagement”  
- Measured by teachers’ ratings of external behaviour and classroom adaptability; work habits and conduct as documented on report cards; and attitudes in regards to finding schoolwork interesting, enjoying school, and liking their teacher. | Behavioural, Cognitive, and Emotional                    |
| Archambault et al. (2009)*                    | Fredericks et al’s (2004) three types of school engagement                                                                                         | Behavioural, Cognitive, and Emotional                    |
- Measured by classroom observation of participation and on-task behaviour                                                                       | Behavioural                                               |
| Bender (2012)*                                | “School Engagement”  
- Measured using eight items - how often youth: enjoy being at school; try to do their best work; find class interesting; get along with teachers; listen carefully; complete homework; and get along with other students | Behavioural, Emotional, and Cognitive                    |
- Measured by scales of liking school, avoiding schoolwork, cooperative participation, and self-directedness                                      | Behavioural, Emotional, and Cognitive                    |
- Measured by self-reports of learning strategies                                                                                                  | Cognitive                                                 |
| Bond et al (2007)*                            | “School Connectedness”  
- Measured by student’s commitment to school; relationships with teachers; relationships with peers; participation; and sense of belonging | Behavioural, Cognitive, and Emotional                    |
| Conchas (2001)                                | “School Engagement”  
- Measured by academic success and staying in school                                                                                                | Behavioural                                               |
- Measured using the Rochester Assessment                                                                                                         | Behavioural, Emotional, and Cognitive                    |
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Measured using the RAPS</td>
<td>Measured by reports of feeling bored or happy in school</td>
<td>Measured by paying attention, doing schoolwork, and expending effort</td>
<td>Measured by participation, effort, on-task behaviour</td>
<td>Measured by identification with school, sense of belonging, and sense of voice</td>
<td>Measured by participation (initiative, disruptive behaviour, and inattentive behaviour)</td>
<td>Measured by participation (initiative, disruptive behaviour, and inattentive behaviour)</td>
<td>Measured by if student works hard, level of absenteeism, participation in classroom and extracurricular activities</td>
<td>Measured by attendance, preparation, misbehaviour, sense of belonging, and teacher relations</td>
<td>Measured by effort, attention, and persistence</td>
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</table>

120
<table>
<thead>
<tr>
<th>Authors</th>
<th>Definition</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Measured by knowledge of strategies, participation in community, and the use of goals and intentions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Measured by task-specific thinking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Behavioural Engagement”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Measured by self-monitoring, gestures, concentration, questioning, giving information, and making evaluative comments</td>
<td></td>
</tr>
<tr>
<td>Henry, Knight, &amp; Thornberry (2012)</td>
<td>“School Engagement”</td>
<td>Behavioural and Cognitive</td>
</tr>
<tr>
<td></td>
<td>- Measured by taking the sum of five indicators: standardized test scores (scoring less than proficient in one or more subjects); attendance (missing at least 20% of schools days in a given year); failing one or more courses; one or more suspensions from school; and grade retention.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Measured by effort, on-task behaviour, and RAPS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Measured by use of learning strategies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Behavioural Engagement”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Measured by on-task behaviour and participation in class activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Measured by preparation, homework completion, boredom, misbehaviour, tardiness, and missing class</td>
<td></td>
</tr>
<tr>
<td>Lewis et al. (2011)*</td>
<td>Fredericks et al’s (2004) three types of school engagement</td>
<td>Behavioural, Cognitive, and Emotional</td>
</tr>
<tr>
<td></td>
<td>- Measured by the dimensions of alienation: isolation, estrangement, sense of meaninglessness, and powerlessness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Measured by effort, attention, completing</td>
<td></td>
</tr>
<tr>
<td>Authors</td>
<td>Engagement Type</td>
<td>Measure</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Miller et al. (1996)</td>
<td>“Academic Engagement”</td>
<td>Measured by self-regulation, use of learning strategies, level of effort and persistence</td>
</tr>
<tr>
<td></td>
<td>“Emotional Disengagement”</td>
<td>Measured by negative attitudes about school</td>
</tr>
<tr>
<td>Newmann (1992)</td>
<td>“Student Engagement”</td>
<td>Measured by effort, concentration, and attention</td>
</tr>
<tr>
<td>Newmann, Wehlage &amp; Lamborn (1992)</td>
<td>“Academic Engagement”</td>
<td>Measured by level of effort and psychological investment</td>
</tr>
<tr>
<td></td>
<td>“Substantive Engagement”</td>
<td>Measured by commitment to content of schooling</td>
</tr>
<tr>
<td>Ogbu (2003)</td>
<td>“Academic Disengagement”</td>
<td>Measured by level of effort, ability to focus on tasks, study habits, and academic performance</td>
</tr>
<tr>
<td></td>
<td>“Emotional Engagement”</td>
<td>Measured by feelings of boredom, worry, sadness, and anger in the classroom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Measured by feelings of boredom, worry, sadness, and anger in the classroom</td>
</tr>
<tr>
<td></td>
<td>“RAPS”</td>
<td></td>
</tr>
<tr>
<td>Authors</td>
<td>Engagement Description</td>
<td>Measured Using</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Steinberg, Brown, &amp; Dornbush (1996)</td>
<td>“Emotional Engagement” - Measured by their work orientation (persistence, pride); school orientation (effort, value); and classroom emotions (concentration, attention)</td>
<td>Behavioural and Emotional</td>
</tr>
<tr>
<td>Stipek (2002)</td>
<td>“Student Engagement” - Measured by observations of behaviour and affect; seeking challenges, working independently, accepting responsibility; and feelings about the school and teachers</td>
<td>Behavioural and Emotional</td>
</tr>
<tr>
<td>Voelkl (1997)</td>
<td>“Participation” - Measured by effort, initiative, disruptive behaviour, non-participatory behaviour “Identification with School” - Sense of school belonging and unity value</td>
<td>Behavioural and Emotional</td>
</tr>
<tr>
<td>Wehlage et al. (1989)</td>
<td>“Educational Engagement”</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Measured by psychological investment in comprehending and mastering skills and knowledge</td>
<td></td>
</tr>
</tbody>
</table>

(Fredericks, Blumenfeld, & Paris 2004)

*Note: citations marked * have been added to the original table created by Fredericks et al. (2004).*
APPENDIX B. Respondent Sequencing of Answers Leading to Suicide Ideation Questions

Survey Section: “Adolescent Depression” (Questions administered to the 12-17 age group only)

| If answered “YES” (1) to ANY of these questions: | YDS21: Have you ever in your life had a period of time lasting several days or longer when most of the day you felt sad, empty, or depressed?  
YDS22: Have you ever had a period of time lasting several days or longer when most of the day you felt very discouraged or hopeless about how things were going in your life?  
YDS23: Have you ever had a period of time lasting several days or longer when you lost interest and became bored with most things you usually enjoy, like work, hobbies, and personal relationships?  
YD09: Did you ever have a period of time like this that lasted most of the day almost every day for two weeks or longer? (YES to both of these) |
|---|---|
| AND | YD16: Think of times lasting 2 weeks or longer when your problems with your mood were the most severe and frequent. During those times, how long did your feelings usually last?  
1. Less than an hour  
2. 1-3 hours  
3. 3-5 hours  
4. 5+ hours |
| Answered 2, 3, or 4 (had to be an hour or more) | (re: YD16)  
YD17: How strong were your feelings during those times?  
1. **Mild**  
2. Moderate  
3. Severe  
4. Very severe  
YD18: How often did you feel so bad that nothing could cheer you up?  
1. Often  
2. Sometimes  
3. Not very often  
4. **Never**  
YD19: How often did you feel so bad you could not carry out your daily activities?  
1. Often  
2. Sometimes  
3. Not very often  
4. **Never** |
<p>| Did NOT have the following combination of answers to these questions: | YD21: People who have problems with their mood often have other problems at the same time. These problems may include things like changes in sleep, eating, energy, the ability to keep their mind on things, feeling bad about self. Did you ever have these problems during the worst time in your life? |</p>
<table>
<thead>
<tr>
<th>If YES(1), then:</th>
<th>YD22: respondent enters in the age they were when that occurred (a) – or if more than one time, the most recent time it occurred (c).</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of those who answered YD22a&amp;c:</td>
<td>Thinking about when problems were the worst – or the most recent time when feelings were the worst (if occurred more than once)</td>
</tr>
<tr>
<td></td>
<td>YD24a: Did you feel sad, empty, or depressed for most of the day nearly every day?</td>
</tr>
<tr>
<td></td>
<td>YD24c: Did you feel discouraged about how things were going in your life most of the day nearly every day?</td>
</tr>
<tr>
<td></td>
<td>YD24e: Did you become bored with almost everything like school, work, hobbies, things you do for fun?</td>
</tr>
<tr>
<td></td>
<td>YD24f: Did you feel like nothing was fun even when good things were happening?</td>
</tr>
<tr>
<td>If answered “YES” (1) to any of these questions, were permitted to answer the following questions:</td>
<td>Thinking about when problems were the worst:</td>
</tr>
<tr>
<td></td>
<td>YD26aa: Did you think a lot about death, either your own, or someone else's, or death in general?</td>
</tr>
<tr>
<td></td>
<td>YD 26bb: During that time, did you ever think that it would be better off if you were dead?</td>
</tr>
<tr>
<td></td>
<td>YD 26 cc: Did you think about killing yourself?</td>
</tr>
<tr>
<td></td>
<td>YD 26 dd: Did you make a plan to kill yourself?</td>
</tr>
<tr>
<td></td>
<td>YD 26 ee: Did you make a suicide attempt or try to kill yourself?</td>
</tr>
<tr>
<td></td>
<td>If answered “YES” to any of these, were given the suicide ideation symptom according to the 2011 NSDUH. For this study, those who only answered “yes” (1) to YD26aa were not given the suicide ideation symptom.</td>
</tr>
</tbody>
</table>
APPENDIX C. Coding of the Dependent, Independent, and Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
</tr>
<tr>
<td>Suicide Ideation</td>
<td></td>
</tr>
<tr>
<td>Has Symptom</td>
<td>1</td>
</tr>
<tr>
<td>Does not have Symptom</td>
<td>0</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
</tr>
<tr>
<td>What were your grades for the last semester or grading period you completed?</td>
<td></td>
</tr>
<tr>
<td>“A+, A, or A-” average</td>
<td>1</td>
</tr>
<tr>
<td>“B+, B, or B-” average</td>
<td>2</td>
</tr>
<tr>
<td>“C+, C, or C-” average</td>
<td>3</td>
</tr>
<tr>
<td>“D” or Less than D average</td>
<td>4</td>
</tr>
<tr>
<td>How often felt schoolwork was meaningful in the past 12 months</td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>1</td>
</tr>
<tr>
<td>Sometimes</td>
<td>2</td>
</tr>
<tr>
<td>Seldom</td>
<td>3</td>
</tr>
<tr>
<td>Never</td>
<td>4</td>
</tr>
<tr>
<td>How important thought things learned in past 12 months will be later in life</td>
<td></td>
</tr>
<tr>
<td>Very Important</td>
<td>1</td>
</tr>
<tr>
<td>Somewhat Important</td>
<td>2</td>
</tr>
<tr>
<td>Somewhat Unimportant</td>
<td>3</td>
</tr>
<tr>
<td>Very Unimportant</td>
<td>4</td>
</tr>
<tr>
<td>How interesting courses are at school over the past 12 months</td>
<td></td>
</tr>
<tr>
<td>Very Interesting</td>
<td>1</td>
</tr>
<tr>
<td>Somewhat Interesting</td>
<td>2</td>
</tr>
<tr>
<td>Somewhat Boring</td>
<td>3</td>
</tr>
<tr>
<td>Very Boring</td>
<td>4</td>
</tr>
<tr>
<td>During the past 12 months, how often did your teachers at school let you know when you were doing a good job with you school work?</td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>1</td>
</tr>
<tr>
<td>Sometimes</td>
<td>2</td>
</tr>
<tr>
<td>Seldom</td>
<td>3</td>
</tr>
<tr>
<td>Never</td>
<td>4</td>
</tr>
<tr>
<td>During the past 12 months, in how many different kinds of school-based activities, such as team sports, cheerleading, choir, band, student government, or clubs, have you participated?</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>0</td>
</tr>
<tr>
<td>One</td>
<td>1</td>
</tr>
<tr>
<td>Two</td>
<td>2</td>
</tr>
<tr>
<td>Three or more</td>
<td>3</td>
</tr>
<tr>
<td>Which of the statements below best describes how you felt overall about going to school during the past 12 months?</td>
<td></td>
</tr>
<tr>
<td>You liked going to school a lot</td>
<td>1</td>
</tr>
<tr>
<td>You kind of liked going to school</td>
<td>2</td>
</tr>
<tr>
<td>You didn’t like going to school very much</td>
<td>3</td>
</tr>
<tr>
<td>You hated going to school</td>
<td>4</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td>Continuous measure in years (12-17)</td>
</tr>
<tr>
<td>Age (Years)</td>
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</tr>
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<td>Sex</td>
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<tr>
<td>Male</td>
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<tr>
<td>Female</td>
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<td>Race/Ethnicity</td>
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<td>White/Caucasian</td>
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<tr>
<td>Black/African American</td>
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<tr>
<td>Native American/Alaskan Native; Native Hawaiian/Pacific Islander; Asian</td>
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<tr>
<td>Multiple Race</td>
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<tr>
<td>Hispanic</td>
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</tr>
<tr>
<td>Income Level</td>
<td>Frequency</td>
</tr>
<tr>
<td>-----------------------------</td>
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</tr>
<tr>
<td>Less than 10 000</td>
<td>1</td>
</tr>
<tr>
<td>10 000 – 19 999</td>
<td>2</td>
</tr>
<tr>
<td>20 000 – 29 999</td>
<td>3</td>
</tr>
<tr>
<td>30 000 – 39 999</td>
<td>4</td>
</tr>
<tr>
<td>40 000 – 49 999</td>
<td>5</td>
</tr>
<tr>
<td>50 000 – 74 999</td>
<td>6</td>
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<tr>
<td>75 000 or more</td>
<td>7</td>
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General Support – There is Someone I can talk to about serious problems

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
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</table>

Parental Support – I can talk to my mother/father/guardian about serious problems

<table>
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<tr>
<th>Response</th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
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</table>

Parental Composition

<table>
<thead>
<tr>
<th>Composition</th>
<th>Frequency</th>
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<tr>
<td>Lives with Both Parents</td>
<td>1</td>
</tr>
<tr>
<td>Lives with Just Mother</td>
<td>2</td>
</tr>
<tr>
<td>Lives with Just Father</td>
<td>3</td>
</tr>
<tr>
<td>Lives with Neither</td>
<td>4</td>
</tr>
</tbody>
</table>

Frequency of Alcohol Use – Number of Days in Past Year

Continuous Measure in Days (0-365)
FIGURE 3: Predicted Probabilities of Experiencing Suicide Ideation by Level of School Engagement:

\[ \hat{p} = \frac{e^{-0.175 + 0.029x}}{1 + e^{-0.175 + 0.029x}} \]

FIGURE 4: Predicted Probabilities of Experiencing Suicide Ideation by Sex and Availability of Parental Support

\[ \hat{p} = \frac{e^{1.183 + 0.016a - 0.311b - 0.362d - 0.215e - 0.3f - 0.33g - 0.465h - 0.435i + 0.049j - 0.17k - 0.121l + 0.000m}}{1 + e^{1.183 + 0.016a - 0.311b - 0.362d - 0.215e - 0.3f - 0.33g - 0.465h - 0.435i + 0.049j - 0.17k - 0.121l + 0.000m}} \]