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ABSTRACT

Self Determination Theory (Ryan & Deci, 2000) and related subtheories provided a theoretical framework for identifying important motivational factors contributing to the academic engagement of academically at risk students in alternative schools. The Basic Needs subtheory was used to assess academically at risk students' perceptions of autonomy, competence, and relatedness in regard to academic engagement, self-regulatory styles, and achievement within alternative schools. Organismic Integration subtheory was used as a framework for analyzing the differing levels of motivation and degree of internalization among these students.

Participants were 186 secondary students enrolled in three public alternative education schools, from three different school districts, in a mid-south state. The students completed questionnaires measuring their perceptions of autonomy, competence, and relatedness in regard to cognitive and affective engagement within the alternative school setting. Data on academic achievement and behavioral engagement were collected from school records. School and individual classroom observations, as well as student narrative descriptions of their experiences at the school, provided descriptive data.

Correlational and multiple regression analyses revealed that cognitive and positive affective engagement were predicted by perceptions of competence. Perceptions of relatedness predicted positive affective engagement only. Perceptions of autonomy were predictive of an overall autonomous regulatory style. These findings indicate that many of these academically at risk students are academically engaged with these alternative schools.

Chapter I

A primary objective of schooling in the United States is to prepare students to function effectively in adult society. One measure of school effectiveness is graduation rates (Alliance for Excellent Education, 2009; Heckman & LaFontaine, 2008; Rumberger & Thomas, 2000).The U.S. high school graduation rate peaked at around 80 percent in the late 1960s (Heckman & LaFontaine, 2008). For the past decade, however, the graduation rate has hovered around 68%, ranging from a low of 66.4% in 1995 to a high of 70.6% in 2006 (Swanson, 2009). With the current national average graduation rate of 68%, three out of every 10 students in public schools do not graduate from high school, amounting to 1.3 million students each year (Editorial Projects in Educational Research, 2009).

In light of these figures, it is apparent that a significant population of Americans is beginning their adult lives with limited resources for surviving in, let alone contributing to, our society (Heckman & LaFontaine, 2008; Massey & Thomas, 2000). To attain the goal of an educated citizenry, our schools must develop strategies to support and equip these future adult citizens. One means of assisting students in completing school is creating a supportive academic environment. Such an environment has been found to enhance student motivation and increase academic engagement, self-regulation, and achievement (Greene, Miller, Crowson, Duke, & Akey, 2004; Midgley, Anderman, & Hicks, 1995; Reeve, 2002; Roeser, Midgley, & Urdan, 1996).

Alternative schools have been designed to provide supportive academic environments for those at risk for dropping out. Therefore, the purpose of the present

study is to identify important motivational factors that contribute to the academic engagement, self-regulatory styles, and achievement of academically at risk students in alternative education schools.

In the U.S., the high school diploma remains a minimal but essential credential necessary for success in American life. Even though the dropout trend has not increased dramatically over the past decade, the severity of the negative consequences to both society and the individual dropout has increased. These negative consequences pose serious social and economic concerns for our nation collectively, as well as for the dropout individually. Each dropout represents an "incalculable loss of human potential and a staggering cost to society" (Hamby, 1989, p.21).

Education has always played an important role in earnings determination; however, its relative importance continues to increase over time. With the restructuring of the American economy from the production of goods and services to the production of knowledge and information, education has increasingly emerged as a primary factor in determining both the level of an individual's initial earnings and his or her prospects for earnings growth over time. High school dropouts, in contrast, experience *no significant increase whatsoever* in real earnings over the course of their working lives (Massey & Thomas, 2000). Those who obtain GEDs also earn at the level of dropouts in the labor market (Heckman & LaFontaine, 2008). Even if dropouts eventually complete school, they are generally less productive after high school than students who never drop out (Laird, Cataldi, KewalRamni, & Chapman, 2008; Rumberger & Lamb, 2003).

Societal costs of dropouts are reflected in statistics reporting that, for every race and gender, high school dropouts claim more in government-funded social services expenditures than high school graduates. Students who complete their high school education are more employable, earn higher salaries, and increase tax revenues. High school graduates are also associated with lower welfare costs, reduced public health care costs, and lower incarceration rates. As a matter of fact, for every 1,000 students that are prevented from dropping out of school, there is a lifetime government savings of $81 million dollars. Dropout costs analysis developed by the Intercultural Development Research Association (IDRA) in 2001 (Johnson, 2007) calculated the cost of dropouts to government, based on lost income, tax revenue and the costs of increased job training, welfare, unemployment, and criminal justice. The IRDA estimated that, over a lifetime, each dropout costs state and federal governments approximately $200,000. Estimates of the cost to the individual and to society (lower wages, lower productivity, costs to victims of crime, etc.) are much larger (Johnson, 2007).

Related to the social and economic costs of dropouts, the costs of developing effective intervention programs for potential dropouts is a cost effective option (Catterall, 1987; Heibrunn, 2002; Levin, 1989; OTAC, 2008). Consequently, alternative education programs have been developed to serve these students deemed at risk for dropping out. Although there is some empirical evidence that alternative schools are effective (Dynarski & Gleason, 2002; Lange & Sletten, 2002; Quinn & Poirier, 2006; Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989), the characteristics that facilitate important outcomes such as academic engagement, achievement, and

self-regulation have yet to be explored using a theoretical framework that is both cohesive and research-based.

To help us understand how alternative schools effectively support the school completion of students at risk of dropping out, Self-Determination Theory (SDT) (Ryan & Deci, 2000a), and related sub-theories will be employed. Self-Determination Theory (Ryan & Deci, 2000a) posits that human behavior is influenced by the interaction of individuals and the social context. In a social context such as a school setting, situational factors can nurture or impede a student's basic psychological needs for autonomy, competence, and relatedness (Ryan & Deci, 2002). Self-Determination Theory (SDT) is selected to guide this study as it provides a framework for investigating how the motivational features of alternative schools may support the needs of academically at risk students (Hardrè & Reeve, 2003).

Basic Human Needs (Deci & Ryan, 2000), a sub-theory of Self-Determination Theory (Ryan & Deci, 2000a), is also a particularly useful framework for identifying a source of commonality (universal, basic psychological human needs) among this otherwise diverse group. Organismic Integration Theory (Deci & Ryan, 1985; Ryan & Deci, 2002), another SDT sub-theory, provides yet another guide for examining how these human needs of autonomy, competence, and relatedness specifically influence academically at risk students' motivation within an alternative education setting.

In an alternative education setting, the fulfillment of these three psychological needs will either facilitate or undermine at risk students' academic engagement, self-regulatory style, and achievement. Relative to educational settings, autonomy is

supported by a teacher's provision for optimal choice, ownership, personal relevancy of academic tasks, and an absence of control or coercion (Reeve, 2002). Competence in school is facilitated by opportunities to deal effectively with optimally challenging academic tasks (Deci & Ryan, 1994; Elliot, McGregor, & Thrash, 2002). Relatedness in school refers to a sense of belongingness and feeling connected to others in the school environment (Ryan & Deci, 2002).

The remainder of this document will be organized in the following manner. The review of the literature will examine why traditional public school practices may not support the needs of students who may be vulnerable for dropping out. Specifically, the impact of current educational policies and practices on the academically at risk will be examined. In following, the major characteristics of the academically at risk population and the characteristics of effective alternative education programs will be described. Lastly, the roles of academic engagement, self-regulatory styles, and achievement in school completion will be discussed. A Method section which presents the details of the proposed study will follow the review of literature.

Chapter II

Review of Literature

This review first examines the impact of current education policies and practices upon students who are at risk of not graduating and discusses how contextual features of alternative education schools may support these students. This is followed by a review of the characteristics of academically at risk students and alternative schools. Self Determination Theory (Ryan & Deci, 2000a) and related sub-theories will be discussed in relation to important outcomes of alternative education: academic engagement, self-regulation, and achievement. In the conclusion, the research questions to be addressed by this study will be stated.

Much of the national concern for the "at risk" student population originated in the National Commission on Excellence in Education (1983) report, "A Nation at Risk: The Imperative for Educational Reform." In this report, the term "at risk" was used to denote youths whose potential for success in school and society was limited due to contextual or psychological problems. These students were likely to exhibit risk behaviors such as juvenile delinquency, teen pregnancy, and school dropout (Serna & Smith, 1995). This dissertation study focuses on the academically at risk population: those who are at risk of dropping out of school before completion.

Current nation-wide efforts to ensure the successful completion of high school for these students who are academically at risk include an emphasis on tougher academic standards via high stakes testing and the No Child Left Behind Act of 2001 (NCLB, 2001). Congress specifically acknowledged the severity of the dropout

problem by including graduation rate accountability provisions in this NCLB legislation enacted in 2002 (Aron, 2003). Governmental mandates to increase academic achievement, however, have failed to either increase academic achievement or decrease the drop out rate. Evidence indicates that these measures may actually undermine high school completion, particularly in states requiring exit exams as a requirement for graduation (Christenson & Thurlow, 2004; Glen, 2006; National Research Council & The Institute of Medicine, 2004; "Report Says", 2007; Shirberg & Shirberg, 2006; Vaishau, 2004; Walden & Kritsonis, 2008). The enforcement of yet another mandate provides little hope for resolving the dropout dilemma.

Furthermore, no uniform system of defining a dropout is currently enforced, making accurate national dropout statistics problematic. State and local education systems use differing formulas to calculate graduation and dropout rates (Swanson, 2003). As with the previous two decades of educational reform policies and accountability demands, the dropout rate has remained close to 25 percent (Aron, 2003; Kaufman, Alt, & Chapman, 2001; Vaishau, 2004).

Risk Factors

Approaches to identifying potential dropouts most often use "risk factors" (i.e. student characteristics and performance measures) to discover those students most at risk of academic failure (Fuller & Sabino, 1996; Gleason & Dynarski, 2002). A body of academic risk research indicates that status indicators such as low socioeconomic status (SES), gender, and ethnic minority status are consistently associated with academic risk (Battin-Pearson et al., 2000; Cairns, Cairns, & Neckerman, 1989; Calabrese & Poe, 1990; Rumberger, 1983; Slavin & Madden, 1989). While these

traditional risk factors are consistent characteristics of many dropouts, they are not exact or direct predictors (Dynarski & Gleason, 2002; Ruebel, Reubel, & O'Laughlin, 2001). Dynarski and Gleason's (2002) study of middle and high school dropout programs found there was no single status risk factor that predicted dropping out, among students with two or more risk factors. Additionally, Rumberger (1995) found that student background characteristics explained only one-third of the variability in school dropout rates.

Although a disproportionate number of dropouts are indeed represented within lower SES populations and ethnic minorities (Christenson & Thurlow, 2004; Northwest Evaluation Association, 2006; Thornburgh, 2006), numerous studies have found that students who do not possess these status risk indicators also drop out (Dynarski & Gleason, 2002; LeCompte & Dworkin, 1991; Lee & Burkham, 2003; Rumberger, 1987; Wehlage et al., 1989). School related factors such as size, social relations, and curricular structure have been associated with dropping out, above and beyond students' individual behaviors and background characteristics. Lee and Burkham's (2003) analysis of 190 public high schools found the following school characteristics to be positively associated with school completion: a) schools with 600 or fewer students, b) a curriculum offering a greater number of challenging courses and fewer remedial ones, and c) positive social relations among teachers and students.

Rather than concentrating on student characteristics, focusing instead on factors within the control of the school may be a more effective approach to dropout prevention. Wehlage comments:

> …a wide range of students can become at risk of school failure, that students at risk of dropping out are not necessarily those with the least intellectual ability, and that standard labels for students do not capture the nature of the interaction between at-risk students and the school (p.73).

In order to examine the relationship of school factors to students' decisions to drop out, features of school policies and environments affecting academically at risk students will be discussed next.

Grade Retention Research

An examination of the literature on traditional schooling policies reveals considerable evidence that grade retention, although intended to provide academic support for those at risk, contributes to dropping out (Byrk & Thum, 1989; Hamby, 1989; Jimerson, 2001a; Jimerson, Egeland, Sroufe, & Carlson, 2000; Jimerson, Ferguson, Whipple, Anderson, & Dalton, 2002; Lee & Smith, 1995; Meisels & Liaw, 1993; Pierson & Connell, 1992; Slavin & Madden, 1989). In fact, grade retention is considered to be one of the strongest predictors of dropping out of high school (Jimerson, 2001a; Meisels & Liaw, 1993; Rumberger, 1995). Students who were retained were more likely to drop out of school compared to students who were never retained, even when controlling for achievement level (Rumberger, 1995). Multiple retentions further increase the probability of dropping out. Even with single retentions, however, the most consistent finding from decades of research is a high correlation between retention and dropping out (Grissom & Shepard, 1989; Jimerson et al., 2000; Natriello, McDill & Pallas, 1990; Pierson & Connell, 1992; Slavin & Madden, 1989). Jimerson et al.'s research (2002) reported that achievement gains for

retained students were either "non-existent or not maintained in subsequent years after retention" (p. 50). Jimerson's meta-analysis (2001b) revealed a general failure "to demonstrate that grade retention provides greater benefits to students with academic or adjustment difficulties than does promotion to the next grade" (p.53).

Additionally, the potentially negative stereotyping and alienation from peers accompanying retention may adversely affect students' perceptions of the school environment and weaken their engagement in school. Retention practices can be seen to undermine students' engagement with school and thereby contribute to a student's decision to withdraw or disengage from school (Alexander, Entwisle, & Horsey, 1997; Bridgeland, Di Iulio, & Morrison, 2006; Janosz, Archambault, Morizot, & Pagani, 2008; Lessard et al., 2008; Wehlage, 1991; Weis, 2003: Zvoch, 2006).

According to Finn, Folger and Cox (1991), disengagement from school develops over time and often begins to appear in the early grades as a lack of attentiveness or interest in school. This process may be manifested in behaviors such as tardiness, absenteeism, failing classes and suspensions (Finn, 1989). Ultimately, over time, this lack of connection to school may result in affective and intellectual withdrawal that culminates in dropping out of school (Newmann, 1989; Zvoch, 2006).

Research has also shown a developmental trend toward decreased motivation as students advance in school years (Eccles et al., 1993; Eccles, Wigfield, & Schiefele, 1998; Harter, 1981; Marks, 2000; Otis, Grouzet, & Pelletier, 2005; Roeser, Strobel, & Quihuis, 2002; Stipek, 2002; Wigfield & Eccles, 2002). This declining motivation has been specifically linked with school failure and dropout (Eccles et al.,

1993; Laird, Kienzl, DeBell, & Chapman, 2007). A critical point in this downward trend has been during the transition to secondary school's more "bureaucratized and departmentalized" setting (Simmons, Burgeson, Carlton-Ford, & Blyth, 1987, p. 1220) from the smaller more intimate settings of elementary school. In terms of academic engagement and achievement, Simmons et al. (1987) found a difference of .89 GPA points, the equivalent of almost one entire letter grade with the transition to junior high school. Extracurricular participation, an indicator of behavioral engagement in school (Ekstrom, Goetz, Polack, & Rock, 1986; Finn & Rock, 1997; Mahoney, 2001; Mahoney & Cairns, 1997; O'Brien & Rollefson, 1995; Wehlage et al., 1989), also declined by one activity; a meaningful difference considering the average child belonged to not quite one activity (Simmons et al., p. 1224). Since students who are academically at risk are likely to have less familial support and fewer academic role models during this transition (Brody & Flor, 1998; Brody, Stoneman, & Flor, 1995), these transitions may be particularly traumatic to their academic success. It follows that effective alternative schools will have to counter this tendency for their academically at risk students to be disengaging, if not disengaged, from academics and school. Therefore, acquiring a better understanding of how the alternative school setting is perceived by at risk students is a step toward learning how these schools can support at risk students.

While it would seem beneficial to alter traditional school policies and organizational reforms to meet the needs of the students at risk (Smith, Gregory, & Pugh, 1981), such changes are not often implemented. At present, traditional public school policies are based on standards, assessments, and accountability factors, rather

than student needs. These policies can unfortunately exert a strong effect upon whether a student completes high school (Janosz, LeBlanc, Boulerice, & Tremblay, 1997; National Research Council & The Institute of Medicine, 2004).

Alternative Education

The relatively stable dropout rates indicate traditional public school policies, particularly retention, have not been extremely successful in facilitating high school completion for the academically at risk (Laird et al., 2007; NCES, 2006). Alternative education schools have been developed as an intervention for these students at risk of dropping out. The term "alternative school" can refer to any of the numerous options beyond the traditional K-12 school system such as home schooling, charter schools, special programs for gifted children, as well as schools for the academically at risk (e.g. potential dropouts). Raywid (1994) noted that, although there has been a proliferation of alternative education forms over the last 30 years, two common characteristics remain: “They have been designed to respond to a group that appears not to be optimally served by the regular program, and consequently they have represented varying degrees of departure from standard school organization, programs, and environments” (p. 26).

While there is at this time no single, commonly accepted definition of what constitutes an alternative school (Fizzell & Raywid, 1997; Lange & Sletten, 2002; Raywid, 1999), Raywid's (1994) typology of alternative schools based upon program purposes continues to be one standard for categorizing the types of alternative schools (Lange & Sletten, 2002; NAEA, 2009; OTAC, 2008). Type I school are denoted as schools of choice in which students voluntarily participate. These schools provide a

flexible curriculum and supportive climate to facilitate the completion of credits needed for graduation. These schools emphasize the prevention and recovery of high school drop outs. Type II schools are those in which enrollment is not voluntary. These programs are categorized as punitive programs, typically as alternatives to suspension. Their emphasis is to isolate and provide intervention for disruptive students (Raywid, 1994). Most often, both types of these schools are a part of the secondary school program and serve middle and high school students (National Dropout Prevention Center/Network, 2007). This dissertation study focuses upon Type I, alternative schools of choice.

While there are no exact statistics identifying the number or types of alternative schools in the U.S. (Aron, 2006), current estimates indicate that there are 10,900 public alternative schools serving 612,000 academically at risk students (Kleiner, Porch, & Farris, 2002; Lehr, Lanners, & Lange, 2003). One of the more comprehensive current national level surveys, the 2001 "District Survey of Alternative Schools and Programs," (Greene, 2003) conducted by the National Center for Education Statistics (NCES), provides data on the number and types of public alternative schools for students at risk of academic failure. Findings from this report of a nationally representative sample of 1,534 school districts provide an overview of the practices and services offered by alternative education schools for dropout prevention. A list of percentages of alternative schools employing these practices and services for the 2000-2001 academic school year is as follows:

Curricula leading to a regular high school diploma	91%
Academic counseling	87%
Policies requiring a smaller class size than	85%

regular schools	
Remedial instruction	84%
Opportunities for self-paced instruction	83%
Crisis/behavioral intervention	79%
Career counseling	79%

This survey also reported that fifty-four percent of the districts had more students than could be served, indicating that there are not enough alternative schools to serve the number of students who require them (Greene, 2003).

A review of the literature on the array of alternative education programs for the academically at risk identifies three major areas in which effective alternative schools vary from traditional public schools (Aron, 2003; Aron & Zweig, 2003; Foley & Pang, 2006; Natriello et al., 1990; Neuman, 1994; Quinn & Poirier, 2006; Wehlage, 1991; Young, 1990). These three areas include differences in 1) structural organization, 2) school climate, and 3) instruction and curriculum. In regard to the structural organization, public alternative education programs typically function as either a self-contained school, housed in separate buildings apart from the traditional school, or as a school-within-a-school, contained within the larger school. In either format, with site based administration, smaller class sizes, and more individualized instruction, alternative school organization is generally more student centered than traditional secondary schools (Dynarski & Gleason, 2002; Foley & Pang, 2006; Neuman, 1994).

Closely related to the organization of alternative schools is their school climate. School climate may be broadly defined as one's subjective experience within a school's social atmosphere (Cohen, 2006). The school climate of effective alternative education programs differs from that of more bureaucratically organized traditional schools.

Alternative schools are generally smaller, with a smaller ratio of students to teachers. With a smaller setting, positive social relationships and a sense of community are more easily nurtured. Cultivating a strong sense of connection and belonging among students, and between students and teachers, is a priority (Aron, 2003). Effective alternative schools for the academically at risk are typically described as caring communities, founded upon the creation and maintenance of supportive relationships, democratic values, and student autonomy (Lange & Sletten, 2002; Lehr & Lange, 2000; Wehlage et al, 1998).

Byrk and Driscoll (1988) developed a definition of "community in schools" based on their analysis of the High School and Beyond database. Their definition including three elements: 1) shared values, 2) a common agenda, and 3) a caring and collegial climate. Byrk and Driscoll collected data with a measure based on this definition and found this communal organization and accompanying caring climate was positively related to high school students' academic interest and achievement, and negatively related to dropout rates, absenteeism, and levels of misbehavior. Additional findings by Coleman & Hoffer (1987) and Byrk, Lee, and Holland (1993) using this same database, found private Catholic schools, as compared with public high schools, to be more successful in retaining students, particularly those students identified as being academically at risk. This effect was directly attributed to the level of communal organization of the Catholic schools (i.e., the differences were diminished or eliminated when communal organization was controlled).

Neuman's (1994) research on alternative education characterized the alternative school climate as involving collaborative decision making among teachers, students,

and administrators, along with student involvement in governance. Students often jointly participated in the management and decision making of their own academic goals as well as the overall governance of the school (Aronson, 1995; Neuman, 1994). Additional support services such as child care, medical care, substance abuse awareness programs, and close follow up procedures on truancy and absenteeism further contributed to a sense of community in alternative programs (Aronson, 1995; Donnelly, 1987; Dynarski & Gleason, 2002; Leone & Drakeford, 1999; Natriello, et al., 1990; Wehlage, et al., 1989).

In regard to instruction and curriculum, a general education curriculum aligned with state standards predominates in alternative schools; however, students may be allowed greater autonomy to pursue personally relevant academic and career interests and aspirations. Most alternative schools supplement the general education curriculum with career and life skills training, counseling, and crisis/behavior interventions (Guerin & Denti, 1999; Lange & Sletten, 2002; Lehr et al., 2003). Partnerships with community vocational schools and youth work service organizations frequently provide these supplemental resources (Lehr et al., 2003).

Alternative schools offer a variety of instructional and curricular innovations that have been particularly beneficial to the academic success and achievement of academically at risk students (Allen & VanSickle, 1984; Johnson, Johnson, & Stanne, 2000; Kulik, Kulik, & Bangert-Drowns, 1990; Wehlage et al., 1989). Innovative methods such as cooperative learning, experiential learning, and mastery learning (Foley & Pang, 2006; Kulik et al., 1990; Mottaz, 2002; Wehlage et al., 1989) are frequently employed by effective alternative programs to enhance academic and social

competence (Aron, 2003; Linker & Marion, 1995; National Research Council & Institute of Medicine, 2004; Neuman, 1994; Raywid, 1994). With smaller ratios of students to teachers, teachers have greater flexibility in accommodating learning differences. Small group and individualized instruction arrangements allow for adjustments in the pace and level of instruction (National Research Council & Institute of Medicine, 2004; Wehlage et al., 1998). Flexible school schedules provide options such as self-paced and/or on-line learning, and evening or weekend classes accommodate students' employment, family obligations, and other critical needs (Duke & Griesdorn, 1999; Guerin & Denti, 1999; Kleiner et al., 2002).

In this preceding discussion of alternative school characteristics, environmental features of effective alternative schools are identified that may support the basic needs of at risk students. Relatedness and autonomy needs are supported as students participate in a caring climate, as provided by alternative school's communal organization. Competence is enhanced by alternative schools' curricular adaptations and resources which provide students with academic support and challenge. In turn, as students' basic needs for autonomy, caring relationships, and a sense of competence are supported, a commitment to school values and goals is nurtured. Consequently, academic engagement and achievement are enhanced (Schaps, 2000). With the insights gathered from students' perceptions of these alternative school features, alternative education programs will have useful information for fostering a motivating school environment that supports students' successful completion of their schooling.

Because self determined motivation has been identified as an important factor in studying potential dropouts (Hardrè & Reeve, 2003; Vallerand, Fortier, & Guay, p.

1172, 1997), Self-Determination Theory (SDT) (Ryan & Deci, 2000a) is selected as the conceptual framework to guide this study. Self Determination Theory provides a useful framework to explore students' perceptions of how alternative education settings support the basic needs of academically at risk students.

Self Determination Theory

Self Determination Theory (SDT) (Ryan & Deci, 2000a) is a broad theory of motivation comprised of four mini-theories (Ryan & Deci, 2002). Central to the assumptions of Self Determination Theory (SDT) is the premise that humans have a need to be autonomous and have an innate desire to "explore, understand, and assimilate aspects of their environment" (Deci & Ryan, 1994, p.12). Motivated behavior is thus defined as that which is volitional and intentional (Deci & Ryan, 1985). According to SDT, as an individual's sense of self determination, or autonomy, increases, the individual's intrinsic motivation will increase accordingly. Intrinsic motivation is defined as motivation to engage in an activity for its own sake (Pintrich & Schunk, 1996). It originates from within an individual, whereas extrinsic motivation, in contrast, results from factors external to an individual (Ormrod, 2008; Ryan & Deci 2000a). In regard to learning, intrinsic motivation is associated with positive educational outcomes including increased academic engagement, achievement (Gottfried, 1985; Gottfried, 1990; Reeve, 2002), and academic self-regulation (de Charms, 1976; Pintrich & DeGroot, 1990; Ryan & Deci, 2006).

Basic Needs Theory

A sub-theory of Self Determination Theory relevant to understanding academic motivation is Basic Needs Theory (Deci & Ryan, 2000). Self determination

is supported by a context which satisfies basic psychological needs, resulting in optimal psychological well-being. Basic Needs Theory (Deci & Ryan, 2000) identifies these three needs as: 1) a need to feel competent, 2) a need to be autonomous, and 3) a need to feel related to a social entity. It is hypothesized that autonomy, competence, and relatedness are basic, innate, and universal psychological needs which define the environmental factors that are essential in supporting "motivation, performance, and well being" (Ryan & Deci, 2002, p. 27). It follows then, that the quality of an individual's motivation is determined by the degree to which the individual's basic psychological needs are met within a given environment (Deci & Ryan, 2000).

Within a school context, these psychological "nutriments" (Deci & Ryan, 2002) of competence, autonomy, and relatedness have been found to foster academic engagement (Deci & Ryan, 1985; Deci & Ryan, 2002; Eisenman, 2007; Reeve, 2002; Reeve, Jang, Carrell, Jeon, & Barch, 2004) by supporting optimal learning conditions which enhance intrinsic motivation. Conversely, a lack of these psychological nutriments undermines the quality of learning and contributes to the disengagement of the student from the learning environment.

In this study, students' perceptions of these needs of autonomy, relatedness, and competence will be explored within the alternative school context. Each of these basic needs will be discussed separately in regard to its impact upon motivation.

Autonomy. The basic need for autonomy within the self determination framework refers to the self initiation or inner endorsement of one's behavior (Deci & Ryan, 2002). Autonomous behavior is viewed as being the perceived origin (de Charms, 1968) or source of one's own behavior (Deci & Ryan, 2002). Educational

studies of autonomy have identified a host of positive educational outcomes including higher academic achievement (Miserandino, 1996) higher perceived academic competence (Reeve, 2002: Reeve et al., 2004; Ryan & Grolnick, 1986), and higher rates of retention (Vallerand & Bissonett, 1992; Vallerand et al., 1997). An autonomy supportive context provides choice, an opportunity for self-direction, and a minimum of externally imposed goals, pressured evaluations, and demands. Autonomy supportive settings also offer informational, competence-relevant feedback, as well as a context which is responsive to the student's perspective. In contrast to this are settings that exert control through external pressures such as extrinsic rewards, coercion, and ego-involvement (Reeve & Jang, 2006). These controlling circumstances diminish autonomous motivation.

Of particular relevance to this study is research in high school settings conducted by Vallerand, Fortier, and Guay (1997). Vallerand et al. found that student perceptions of autonomy support from teachers, school administrators, and parents related to intentions to drop out. Compared to their non-dropout peers, the drop out students perceived less support from teachers, school administrators, and parents. In the daily school setting, however, schools generally do not directly influence parenting styles, and school administrators are not frequently in contact with all students (although they may establish school wide policies that are perceived as controlling or autonomy supporting). Thus, in a school setting, the teacher's role in facilitating autonomy support is important.

Black and Deci (2000) investigated the teacher's role in supporting the autonomous motivation of college level students. This study measured the effects of

teacher autonomy support on organic chemistry students' perceived autonomy support, perceived competence, self regulatory styles, causality orientations, and grade orientations. Findings indicated that perceived autonomy support was positively correlated with an autonomous self regulatory style, perceived competence, interest, and overall course performance. An autonomous self regulatory style was negatively correlated with lower levels of anxiety. Importantly, teacher autonomy support directly predicted student performance (Black & Deci, 2000).

In contrast, Assor, Kaplan, Kanat-Maymon, and Roth (2005) illustrated the negative effects of non-autonomy supportive conditions (directly controlling teacher behaviors) in their study of fourth and fifth grade students. Students' perceptions of their teachers' controlling behaviors and negative emotions were gathered by self-report measures. In addition, data on the students' perceptions of their own academic motivation, competence, and engagement were gathered. The student data were then correlated with teachers' assessments of their students' motivation and engagement. The findings revealed that, as expected, student engagement and teacher controlling behaviors were negatively related. Not only did student motivation decrease, but amotivation, the lack of volition to make an effort to engage in action (Deci & Ryan, 1985) *increased*. Amotivation was considered to be a more serious negative outcome than other self-regulatory styles (Ryan & Deci, 2000b). These findings emphasize the undermining effect that controlling teacher behaviors can have upon students' academic engagement and motivation.

Reeve's research (2002; see also Hardré & Reeve, 2003; Reeve et al., 2004; Reeve & Jang, 2006) in particular, provides practical ways that teachers' behaviors can

either support or undermine autonomy. Reeve's experimental research study (Reeve, et al., 2004) demonstrated that teachers could be trained in autonomy supporting behaviors. Furthermore, these autonomy supporting behaviors resulted in increased student engagement. Autonomy supportive conditions have been positively correlated with similar positive outcomes such as increased behavioral and affective engagement, and a more intrinsically oriented regulation style (Grolnick & Ryan, 1987; Ryan & Connell, 1989; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004).

Another experimental study by Reeve and Jang (2006) supported the correlation of specific instructional behaviors with students' perceptions of either autonomy support or control. From a list of 11 instructional behaviors identified as autonomy supporting (time listening; time allowing students to work in own way; time student talking; praise as informational feedback; offering encouragement; offering hints; being responsive to student-generated questions; seating arrangements; providing rationales, asking what student wants, making perspective-acknowledging statements), all correlated positively with perceived autonomy support. Eight of the ten (time listening; time allowing students to work in own way; time student talking; praise as informational feedback; offering encouragement; offering hints; being responsive to student-generated questions; and making perspective-acknowledging statements) were found to be statistically significant at a more stringent alpha of .009.

Similarly, from a list of nine instructional behaviors associated with controlling behaviors (time holding/monopolizing learning materials; exhibiting solution or answer; uttering solutions; uttering directive or command; making should/ought statements; asking controlling questions; deadline statements; praise as contingent

reward; criticizing the student), the first six were found to be negatively correlated to perceived autonomy support, at a more stringent alpha of .011. Based on these findings, this list of autonomy supporting or controlling instructional behaviors used in Reeve and Jang's (2006) study has been included in the present study to guide classroom observations in alternative schools (Appendix "G").

Autonomy supporting conditions present in alternative schools begin with a student's initial *choice* to be at the school. This, in turn, should enhance feelings of ownership and commitment to school. Many alternative schools include student participation in school governance and decision making (Aronson, 1995). An alternative school which supports autonomy would allow the student flexibility in directing his or her learning, allow for shared decision making in selecting and pursuing academic goals, and would reduce external rewards, controls, or pressures (Reeve, 2002; Skinner & Belmont, 1993).

Competence. Within Self Determination Theory (Ryan & Deci, 2000a), the inherent need for competence is described as exercising one's capacities, and exhibiting a sense of confidence and effectance (Ryan & Deci, 2002, p. 7). It is this need that motivates individuals to actively seek optimally challenging opportunities (Deci & Ryan, 2002). According to SDT, perceptions of autonomy and competence should closely interact with one another to develop well-being (Deci & Ryan, 2000).

In the literature, competency beliefs have been conceptualized as perceived competence (Harter, 1982), perceptions of ability (Greene & Miller, 1996), and self-efficacy (Bandura, 1986). SDT's conceptualization of competence as "effectance" is a broader term, stemming from an effectance motivation perspective (White, 1959). In

the SDT model, competence refers to a sense of mastery and accomplishment, particularly when challenged optimally (Ryan, 1991). Competence is also considered a "task specific" construct, meaning that an individual may have differing self-efficacy or competence in differing contexts (Pajares, 1996). In this study academic competence will be operationalized as a students' perceived academic competence in their alternative school.

Within a learning environment, academic competence is strongly correlated with students' choices of activities, effort, persistence, and ultimately, learning and achievement (Bandura, 1986; Connell & Wellborn, 1991; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996; Reeve, 2002; Schunk, 1989b; Schunk, 1991; Skinner & Belmont, 1993). In a school setting, competence may be fostered by greater student autonomy, experiences of success at optimally challenging tasks, and information rich feedback supplied by teachers (Deci, Schwartz, Sheinmen, & Ryan, 1981; Fortier, Vallerand, & Guay, 1995; Reeve, 2002; Reeve et al., 2004). Students with high perceived academic competence demonstrate higher academic achievement than those with lower perceived academic competence, even after controlling for ability (Bandura, 1986). Clearly, supporting a student's sense of academic competence is an important mediator for any number of school related outcomes. In Linnenbrink & Pintrich's (2003) review of motivational constructs impacting academic engagement, self efficacy (competence) was identified as "key" in facilitating behavioral, cognitive, and motivational engagement in school. It has also been consistently linked with better academic achievement outcomes (Pintrich & Schunk, 1996; Schunk, 1989; Zimmerman, 2000).

Research by Pintrich and De Groot (1990) found that the high self efficacy held by junior high students in their study was positively related to their usage of cognitive and self regulatory learning strategies and ultimately related to their achievement. Similar findings (Borkowski, Carr, Rellinger & Pressley, 1990; Greene & Miller, 1996; McCombs, 1989; Metallidou & Vlachou, 2007; Miller et al., 1996; Zimmerman, 1989; Zimmerman & Martinez-Pons, 1992) suggest students' academic self efficacy is instrumental in their cognitive engagement. These findings further support the importance of a sense of competence or self-efficacy to cognitive engagement.

Since students in alternative school settings have frequently experienced repeated academic failure (Battin-Pearson et al., 2000; Natriello et al., 1990), specific instructional strategies targeted towards supporting academic and social competence are employed. Alternative schools typically include the use of individualized learning, mastery learning, cooperative learning, and self monitoring of progress (Lange & Sletton, 2002; NAEA, 2007). Efforts to support social competence (such as peer mediation skills) and citizenship and social responsibility (such as service learning) are also integrated (Guerin & Denti, 1999; Lehr & Lange, 2000; OTAC, 2008).

Relatedness. In addition to autonomy and competence, the basic need of relatedness is hypothesized to enhance intrinsic motivation in a social context. Relatedness is characterized as a sense of belongingness (Anderman, 2003; Baumeister & Leary 1995; Freeman, Anderman, & Jensen, 2007; Goodenow, 1993; Ryan, 1995; Solomon, Watson, Battistich, Schaps, & Delucchi, 1996), secure attachment (Bowlby, 1969; Wentzel, 2002), and feeling a part of a community (Byrk & Driscoll, 1988; Byrk et al., 1993; Wehlage et al., 1989). Most of the literature in this area has measured

students' perceptions of relatedness relative to teacher behaviors (i.e. "pedagogical caring", Wentzel, 1997), peers, or, as part of a school "community" (Byrk & Driscoll, 1988; Byrk et al., 1993; Wehlage et al., 1989).

Studies of teacher-student relationships have highlighted the importance of supportive teacher behaviors in regard to positive academic outcomes such as academic engagement (Cornelius-White, 2007; Den Brok, Fisher, & Scott, 2005; Englund, Egeland, & Collins, 2008; Reeve, 2002; Reeve & Jang, 2006; Ryan, Stiller, & Lynch, 1994; Skinner & Belmont, 1993; Tucker, et al., 2002; Wentzel, 1997), perceived academic self efficacy (Sakiz, Pape, & Hoy, 2007; Skinner & Belmont, 1993) and self regulation (Zimmerman, 1986). Findings from Cornelius-White's (2007) meta-analysis of leaner-centered teacher-student relationships indicated reductions in dropouts (r = .35), disruptive behavior (r = .25), and absences (r = .25) were associated with a learner-centered environment. Teacher attributes in such an environment were described as "empathy, honoring students' voices, warmth/respect, genuineness, positive relationships, nondirectivity, and encouraging of learning and higher order thinking" (p. 118). These qualities are also quite similar to autonomy supporting teacher behaviors described by Reeve (2002) and Reeve and Jang (2006). Reeve (Reeve & Jang, 2006) concluded that the development of "positive, high quality interpersonal relationships" (p.217) between teachers and students provided the context for self determined motivation.

As a part of Wentzel's (1997) study on prosocial goals and achievement, Wentzel gathered students' descriptions of teacher behaviors that illustrated "teacher caring". Not surprisingly, the students' descriptions correlated with features of effective

parenting (Baumrind, 1971, as cited in Wentzel, 1997). The five features identified were: modeling, democratic communication styles, clear expectations for behavior, rule setting, and nurturance (Wentzel, p. 412). Findings from Wentzel's study supported a positive correlation between perceived teacher caring and students' academic achievement, as well as their endorsement of prosocial and social responsibility goals.

Findings from Englund, Egeland, and Collins' study (2008) of "unexpected" dropouts indicated that some seemingly academically capable students dropped out due to lack of supportive parent relationships. For these vulnerable students, it was found that the presence of a supportive teacher mitigated the impact of the negative parental relationship and supported their high school completion. Clearly, the teacher-student relationship has an important role in sustaining academic motivation.

Friends at school also impact a student's sense of relatedness (Hymel, Comfort, Schonert-Reichl, McDougall, 1996; Kindermann, McCollam, & Gibson, 1996; Wentzel, 1997). In a school setting, positive peer relationships may encourage positive affective engagement through participation in school social activities and extracurricular activities. Socially rejected students, by comparison, show lower levels of engagement and are frequently at risk for dropping out (Wentzel & Caldwell, 1997). Further research from Ryan, Stiller, and Lynch (1994) found that adolescents' quality of relationships to parents, teachers, and peers predicted academic motivation and overall school adjustment.

Students' perceptions of the school setting as a caring and supportive community have demonstrated positive motivational outcomes on achievement and

forms of engagement (Battistich, Solomon, Kim, Watson, & Schaps, 1995; Byrk & Driscoll, 1988; Byrk, et al., 1993; Furrer & Skinner, 2003; Natriello et al., 1990; Roeser, Midgley, & Urdan, 1996). Characteristics that define a school as a community include shared values, opportunities for active participation, a common agenda of activities, and participation in decision making (McMillan & Chavis, 1986). In addition to positive academic outcomes, caring school settings can foster student attachment to the school. This, in turn, can result in identification and internalization of school norms and values (Battisich et al., 1995; Noddings, 1992).

Much of the research on this topic of relatedness has been gathered from the academically at risk population in traditional school settings. Anecdotal and ethnographic data gathered from this group frequently contains themes of "alienation", not feeling connected, and perceptions of teachers as uncaring (Byrk et al., 1993; Calabrese & Poe, 1990; De La Ossa, 2005; Garber, 2002; Kim & Taylor, 2008; Lehr & Lange, 2000; Lessard et al., 2008; Natriello, et al., 1990; Wehlage et al., 1998). These student perspectives indicate the need for relatedness among the academically at risk.

In alternative educational settings, the smaller overall school size and smaller classes, with a ratio of approximately 15:1 or smaller, enhances a sense of community and fosters warm, caring relationships (Aronson, 1992; Lindsay, 1982). Additionally, a sense of community has been associated with student affiliation with school (Aronson, 1992; Young, 1990). The role of teachers is often augmented by personal and academic counselors, and mentors (Aronson, 1992; Young, 1990). These relationships are a central feature of alternative school culture and should foster similar relationships among students.

From this discussion of the components of Basic Needs Theory (Deci & Ryan, 2000), as well as the preceding discussion of alternative education, it can be seen that alternative schools' features can possibly facilitate academic competence, student autonomy, and a sense of community and, thus, fulfill the basic needs. What is not apparent, however, is to *what degree* these basic needs influence academically at risk students' engagement in their learning. For further exploration, another sub-theory of Self Determination Theory (Ryan & Deci, 2000a), Organismic Integration Theory (Deci & Ryan, 1985) will be discussed.

Oranismic Integration Sub-Theory

Within Self Determination Theory (Ryan & Deci, 2000a), a sub-theory, Organismic Integration Theory (OIT) (Deci & Ryan, 1985), is useful for explaining motivational differences in students' learning strategies, achievement, and persistence (Vansteenkiste, Lens, & Deci, 2006). OIT provides a model for analyzing the development of differing levels of motivation, as well as the conditions that facilitate or impede the internalization of self-regulated behaviors. Central to a discussion of OIT is the concept of internalization. In OIT, internalization refers to an individual's assimilation of previously externally regulated values or behaviors into his or her self system (Deci, Eghrarl, Patrick, & Leone, 1994; Ryan, Connell, & Grolnick, 1992). This process is facilitated by the fulfillment of the basic needs of relatedness, autonomy, and competence. Relatedness has been associated with greater internalization of positive school related behaviors when valued or modeled by individuals with whom students feel a sense of attachment (Grolnick & Ryan, 1987; Ryan & Deci, 2000a; Ryan, Stiller, & Lynch, 1994). Similarly, when students' sense of

competence is supported, they may attempt or adopt academic activities of an important reference group. Support for autonomy is "the critical factor" (Ryan & Deci, 2002, p.19) for determining the degree of internalization. Ultimately, autonomy support determines whether students fully internalize academic values and adopt adaptive regulatory styles (Ryan & Deci, 2002; Reeve, 2002). Within a school setting, this internalization process could include the endorsement of academic values such as academic achievement and school completion (Otis et al., 2005; Walls & Little, 2005).

Organismic Integration Theory identifies distinct styles of motivation by placing extrinsic and intrinsic motivation along an autonomy-control continuum ranging from a state of amotivation (being neither intrinsically nor extrinsically motivated), with an impersonal perceived locus of causality, to an optimal state of being intrinsically motivated (motivated solely by interest, enjoyment and/or inherent satisfaction), with the associated internal locus of causality (Ryan & Deci, 2000a, p. 61). Thus, the perceived locus of control affects the level of motivation, the style of self-regulation, and degree of internalization on the motivational continuum. Between these two opposing poles of amotivation and intrinsic motivation, a progression of four regulatory styles of extrinsic motivation is described, along with the associated perceived loci of causality.

The first of these levels of extrinsic motivation is *external* regulation. This level represents the least self determined form and is characterized by an external perceived locus of causality. This motivational style is regulated by external pressures such as rewards, penalties, or deadlines (Ryan & Deci, 2000b), as in controlling school contexts. Controlling settings have been found to undermine students' intrinsic

motivation and sense of autonomy (Reeve, 2002; Reeve & Jang, 2006; Vallerand et al., 1997). Students with this regulatory style have not internalized external school contingencies and may see themselves as less autonomous, having less control over learning outcomes. An externally regulated style of behavior is also associated with poor academic achievement and being academically "at-risk" (Ryan et al., 1992).

The next level of extrinsic motivation is *introjected* regulation. This regulatory style is partially internal, yet it is similar to external regulation in that the perceived locus of causality is still somewhat external (i.e. dominated by feelings of "should", "ought", or "guilt") (Pintrich & Schunk, 1996, p. 273; Ryan & Deci, 2000b). Introjected regulation is indicated by the extent a behavior is controlled by internal pressures, as a form of "self control" (Ryan et al., 1992, p.177). Introjected behavior is most often controlled by internal pressures such as feelings of guilt, anxiety, and contingent self-approval (Levesque, Zuehlke, Stanek, & Ryan, 2004; Ryan & Deci, 2000b).

An introjected regulatory style is regarded as a non-integrated regulatory style, as it may be considered merely an "interrnal form of a previously externalized regulation" (Ryan et al., 1992, p.177). In school settings, this regulatory style is most often associated with negative affective engagement and issues of anxiety and self worth relative to performance standards (Ryan et al., 1992).

The third level of extrinsic motivation, *identified* regulation, is typified by an increasingly internal perceived locus of causality and a highly autonomous regulatory style (Reeve, 2002; Ryan & Deci, 2000b). In this regulatory style, behavior is motivated by self valuing and self-endorsement of an activity, although external

rewards may result (Vansteenkiste et al., 2006; Ryan & Deci, 2000b). For example, in an educational setting, identified regulation would be based on the student's perceived value and worth of school activities because he or she sees the personal utility of the activity (Levesque et al., 2004; Reeve 2002). Identified regulation in school correlates positively with intrinsic motivation in school (Ryan et al., 1989) and has been said to indicate school satisfaction and a willingness to accept the goals of schooling (Ryan et al., 1992).

The fourth and final level of extrinsic motivation, *integration*, represents the most internal perceived locus of causality (Reeve, 2002; Ryan & Deci, 2000b). While motivation is still instrumental, rather than intrinsic (Pintrich & Schunk, 1996), it is regarded as the most self-determined level of extrinsic motivation. Integrated behavior is based on congruence or synthesis of the behavior with the self (Deci et al., 1994; Levesque et al., 2004). During school years, however, when students are developing their sense of self, full integration of behavioral regulation is not likely to occur (Chandler & Connell, 1987; Patrick, Skinner, & Connell, 1993). Similarly, the present study does not assess this level of autonomy.

At the end of this continuum is intrinsic motivation. Intrinsic motivation exists when the perceived source of control is exclusively internal, and is sustained by inherent enjoyment of the activity itself, free of external rewards or contingencies (Reeve, 2001; Ryan & Deci, 2000b). A student who is intrinsically motivated would find academic tasks inherently gratifying and satisfying without external inducement. Engagement in learning is satisfying for its own sake. Similar to internalized motivation, intrinsic motivation proceeds from internal regulation; however, it arises

spontaneoulsy and may therefore be more unpredictable (Reeve, 2001). Internalized motivation, on the other hand, may become a part of a student's sense of self and may be more stable over time (Otis, et al., 2005; Reeve et al., 2005).

Since self-regulatory styles influence learning outcomes, determining conditions which facilitate self-directed or autonomous learning and the internalization of school values is an important consideration for alternative school environments. To assess students' regulatory styles in regard to an environment that supports their autonomy, competence, and relatedness, Grolnick, Farkas, Sohmer, Michaels, and Valsiner (2007) initiated a 15 week, after-school, science intervention program for disadvantaged middle school students. The study featured an experimental design with pre- and post-intervention measures of the competence, relatedness, and autonomy enhancing features for the experimental group. The control group was not provided with this support. Using the Self-Regulation Questionnaire (Ryan & Connell, 1989), students' regulatory styles were self-assessed in regard to their school behavior. Three sub-scales measured individual differences in academic behaviors and correlated scores with one of the three externally regulated styles (external regulation, introjected regulation, or identified regulation). A fourth sub-scale measured the degree of intrinsic motivation. The scores from the four subscales were also weighted to calculate a composite Relative Autonomy Index representing the students' overall degree of autonomy. Findings for the experimental group indicated a decrease in external regulation and a stable Relative Autonomy Index over the 15 week period. In contrast, the control group showed a slight increase in external regulation and a decrease in autonomy as indicated by the Relative Autonomy Index scores. Positive

effects on students' science grades and self reported engagement were also indicated for the experimental group. These results in part confirm Self Determination Theory's (Deci & Ryan, 1985) assertion that a learning environment that supports autonomy, competence, and relatedness can facilitate the development of autonomous regulatory styles and academic engagement.

Within alternative school contexts, support for autonomy and competence is provided by school policies that invite and integrate student input, rather than imposing control through external regulations. In most alternative schools, students routinely participate in the establishment of their own graduation plan including the transition to higher education or full time employment (Aron, 2003; Aronson, 1995; Benz, Lindstrom, & Yarnoff, 2000; OTAC, 2008). Some alternative schools also include student participation in the development of school goals and governance (OTAC, 2008). Support for relatedness is provided by a warm, caring environment (Kim & Taylor, 2008; Noddings, 2005), which can enhance the emulation of desirable regulatory styles, particularly of significant others such as teachers (Ryan, Stiller, & Lynch, 1994).

The exposure to desirable regulatory styles is particularly important for academically at risk students, as these students may lack opportunities to observe and develop self regulation strategies outside of the school environment (Baumeister & Vohs, 2004; Belfiore & Hornyak, 1998; Brody & Flor, 1998; Brody, Stoneman, & Flor, 1995). Academically at risk students may be particularly susceptible to risk taking behaviors and negative peer influences. Low levels of self-regulation among adolescents have been associated with deviant peer group affiliation (Gardner, Dishion,

& Connell, 2008), the development of antisocial behavior, and substance use (Wills & Dishion, 2004). Conversely, high levels of self-regulation have been associated with less vulnerability to negative peer influences. Consequently, the transfer of academic self regulation to contexts beyond school is salient for academically at risk students who may be susceptible to negative peer influences. Self regulation of learning is an important goal of schooling, closely related to academic engagement and school completion (Schunk & Ertmer, 2000).

Academic Engagement

Another motivational construct closely related to school completion is academic engagement (Finn & Rock, 1997; Janosz, et al., 2008; National Research Council & Institute of Medicine, 2004; South, Haynie, & Bose, 2007). Academic engagement has been described as the critical variable in dropout prevention and intervention (Grannis, 1994 as cited in Reschly & Christenson, 2006) and as "the key to dropout on the personal side of the equation" (Alexander, et al, 1997, p. 89). Increased academic engagement has been associated with a lower risk of dropping out, even after controlling for background and achievement (Rumberger, 2001).

The research literature currently conceptualizes academic engagement as a multi-dimensional construct (Ainley, 1993; Fredricks, Blumenfeld, & Paris, 2004; Glanville & Wildhagen, 2007), manifested in students' behavioral and psychological involvement in school (Connell & Wellborn, 1991; Fredricks et al., 2004; Reeve, 2002; Skinner & Belmont, 1993). The three distinct dimensions consistently identified in the literature include: 1) behavioral engagement, 2) affective engagement, and 3) cognitive engagement (Connell & Wellborn, 1991; Fredricks et al., 2004; Glanville &

Wildhagen, 2007). According to Morse, Christenson, and Lehr (2004), "When students experience these multiple forms of engagement, the likelihood that they will complete school increases" (p.3).

One of the more easily observed forms of engagement is behavioral engagement. Behavioral engagement may be overtly demonstrated by active attention and participation in class, persistence, asking questions, and completion of assignments (Fredricks et al., 2004; Morse, Christenson, & Lehr, 2003; National Research Council & The Institute of Medicine, 2004; Reeve, 2002). Behavioral indicators of engagement can include positive conduct behaviors such as compliance with school and class rules, and the absence of negative behaviors such as truancy and disruptive behavior. It may also be manifested in measures of academic achievement such as teacher grades and achievement test scores (Fredricks et al., 2004).

Participation in extracurricular activities has also been associated with behavioral engagement as well as with higher academic achievement and school completion (Ekstrom et al., 1986; Mahoney, 2001; Mahoney & Cairns, 1997; O'Brien & Rollefson, 1995; Wehlage et al., 1989). Finn and Rock's (1997) study of the behavioral engagement of 1,803 minority, low SES students found statistically significant differences between academically successful students and dropouts. Voelkl, for example (1995, 1997), found that elementary students who participated in school activities perceived their school environment to be warm and that those who identified with their school had higher levels of academic achievement. A large-scale longitudinal study conducted by Barber, Eccles, and Stone (2001) also revealed extracurricular activity participation was associated with higher high school grade

point averages, after controlling for background variables and pre-existing differences in intelligence. These findings illustrate positive effects of behavioral engagement upon achievement and school completion. The benefits of two other dimensions of academic engagement, affective and cognitive engagement, will be addressed next.

Positive affective engagement is indicated by positive emotional responses to school such as interest, enjoyment, happiness, enthusiasm for learning, and valuing of school (Connell & Wellborn, 1991; Reeve, 2002; Skinner & Belmont, 1993). Feelings of social bonding (Hirschi, 1969), relatedness to teachers and peers (Anderman & Kaplan, 2008; Furrer & Skinner, 2003; Goodenow, 1993; Goodenow & Grady, 1993; Ozer, Wolf, & King, 2008; Stipek, 2002; Wehlage et al., 1998), and identification with school (Finn, 1989) have also shown a positive correlation with positive affective engagement. Students are more likely to be more intrinsically motivated and adopt an autonomous learning style when they experience positive emotions within the learning environment (Pekrun, Goetz, Titz, & Perry, 2002; Reeve, 2002). Negative affective engagement, on the other hand, can result from students' experiences of negative emotions such as anger, debilitating anxiety, or depression and may undermine learning and achievement (Beilock & Carr, 2005; Bower, 1994; Cassady & Johnson, 2002; Reeve, 2002). Clearly, positive affective engagement in learning is a desirable outcome for alternative schools.

A third component of academic engagement, cognitive engagement, is operationalized as exerting sustained, self-regulated mental effort to academic tasks (Corno & Mandinach, 1983). This focused mental effort may be evident in the types of cognitive strategies students employ. Greene & Miller (1996), Greene et al. (2004),

and Pintrich & DeGroot (1990) associated cognitive engagement with students' metacogntive strategies such as task specific planning and goal setting, drawing on previous experience, and actively transferring new knowledge to other situations. Students' cognitive engagement was inferred from the kinds of cognitive strategies students reported using.

Higher levels of cognitive engagement are associated with meaningful processes such as elaboration, a willingness to persist with difficult tasks (Craik & Lockhart, 1972; Greene & Miller, 1996; Meece, Blumenfield, & Hoyle, 1998), academic achievement , and as previously discussed in Organismic Integration Theory (Deci & Ryan, 1985), more autonomous forms of self-regulation of learning (Zimmerman, 1986). Conversely, the utilization of simple processing strategies such as rehearsal are associated with less cognitive engagement, less persistence (Craik & Lockhart, 1972; Greene et al., 2004; Greene & Miller, 1996; Meece et al., 1998), and less autonomous regulation of learning (Zimmerman, 1986).

Reeve's (2002) description of an autonomy supporting classroom depicts the conditions for cognitive, affective, and behavioral engagement. Classroom conditions which provide students with choice and freedom in directing their own learning, a highly structured environment with clear expectations, informative feedback on performance, and optimal challenge facilitate academic engagement (Reeve, 2002).

Techniques to measure cognitive, affective, and behavioral engagement have included student self-reports and observations (Newmann, 1992; Stipek, 2002). In regard to behavioral engagement, Fredricks et al. (2004), points out that evaluating the quality of "effort, participation, or thinking", (Fredricks et al., p.66) is difficult with

observation alone. The validity of student reports of participation in extracurricular activities, self regulation of learning, and valuing of school are strengthened when they are corroborated with other measures, such as measures of academic achievement (Assor & Connell, 1992) and attendance. To measure academic engagement, this study will collect student self-perceptions of cognitive engagement and affective engagement. Behavioral engagement data will be collected from school records of attendance, disciplinary reports, and extracurricular activity participation. Finn (1989) and Finn & Rock (1997) used similar indicators to measure behavioral engagement. A measure of achievement will be derived from students' cumulative grade point average at their alternative school.

Academic Achievement

To date, most studies of academically at risk students in alternative schools have primarily examined only the outcome of school completion (Christenson & Thurlow, 2004; Rumberger, 2001; Zweig, 2003). While this is obviously an important end result of alternative education, it does not inform of the motivational processes involved in the retention of academically at risk alternative education students. In addition to the aforementioned outcomes of academic engagement and self-regulatory styles, academic achievement is also closely associated with these outcomes. Academic achievement has been associated with school contexts that support autonomy and academic competence (Fortier et al., 1995; Miserandino, 1996). For these reasons, students' cumulative grade point averages will be collected for academic achievement measures and examined in regard to their association with the basic needs of autonomy, competence, and relatedness.

Overview of Study

As reviewed in this chapter, a body of knowledge exists on the best practices in effective alternative education. Similarly, a body of knowledge confirms the relevance of Self Determination Theory to academic settings (Black & Deci, 2000; Deci, Ryan, & Williams, 1996; Ryan & LaGuardia, 1999; Ryan & Powelson, 1991; Vallerand et al., 1997). While ample evidence exists to support the utility of SDT (Ryan & Deci, 2000a) to educational settings, no studies have been found investigating the individual contributions of the basic needs of autonomy, competence, and relatedness to cognitive, behavioral, and affective academic engagement, self-regulatory styles, and achievement in alternative schools. This study adds to the research literature by investigating the contribution of the basic needs variables (autonomy, competence, and relatedness) to academic engagement, self-regulatory styles, and achievement in alternative schools. In addition to using theory-based quantitative scales to examine students' perceptions of their alternative schools, I also conducted classroom observations in an attempt to use qualitative information to shed further light on whether the schools' environments appear to be motivational.

The following research questions will guide this investigation:

1. Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the cognitive engagement of at risk students in an alternative education setting?

2. Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the affective engagement of at risk students in an alternative education setting?

3. Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the behavioral engagement of at risk students in an alternative education setting?

4. Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the self-regulatory styles of at risk students in an alternative education setting?

5. Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the academic achievement of at risk students in an alternative education setting?

6. Do alternative schools have an overall climate that supports at risk students' autonomy in an alternative education setting?

Chapter III

Method

Design

This study was correlational in nature, using bi-variate correlations, multiple regression, and logistic regression to examine relationships among the basic human needs variables of Self Determination Theory (relatedness, autonomy, and competence), dimensions of academic engagement (behavioral engagement, affective engagement, and cognitive engagement), a measure of self-regulatory styles, and a measure of student academic achievement (GPA). The presence of an autonomy supporting climate within the alterative schools was assessed through classroom observations of teacher behaviors using an observational protocol adapted from Reeve & Jang's (2006) study.

Participants

The participants were 186 students, ages 14-20, from three public alternative education schools in three different school districts in a mid-south state. Ninety-four participants were female (50.5%) and 92 participants were male (49.5%). The mean age of participants was 17 and the majority (59.1%) was Caucasian. Fifteen percent were African-American, 11.3% were American Indian, 8.6% were Latino/a, 3.8% were Multiracial, and 2.2% were Asian. The proportion of participants in each ethnic group is similar to the 2008 state alternative school data which reported ethnic distributions of 54.4% Caucasian, 18.1% American Indian, 16.9% African American, 8.7% Latino/a, 1.0% Multiracial and 0.5% Asian (OTAC, 2008).

According to the state alternative education records, academic deficiencies rate as the primary reason that these students enroll in alternative schools (OTAC, 2008). The underlying reasons for these academic deficiencies are as varied as the students; however, truancy most often accounts for much of students' academic deficiencies. Students are often referred to alternative schools by their home schools, community agencies, or the juvenile justice system. In some manner, these students have not demonstrated adequate academic progress appropriate for students of their age. Other related reasons include the following:

1) They have been retained at least one grade for one or more years

2) They have dropped out in the past

3) A student's health, social, or family status may be impairing the student's progress in school (OTAC, 2008).

Contexts

The three alternative schools were purposively selected for this study on the basis of receiving "notable" ratings (on a scale of "marginal, accomplished, or notable") on all of the state's 17 criteria established in the state's school law (OTAC, 2008). These criteria for alternative education programs within the state are condensed in the list below:

1) Initial intake screening of student to determine eligibility by a committee representing the behavioral, social, and academic needs of the student.

2) Student participation in the management and decision making of their own academic goals through the collaborative development of a graduation plan which meets school district requirements.

3) All teaching faculty appropriately licensed or certified and selected on the basis of a record of successful work with academically at-risk students.

4) Courses meet State Board of Education academic curricula standards.

5) Class sizes and student/teacher ratios of no more than 15:1.

6) Opportunities for extracurricular participation, arts education, individualized instruction, remedial courses, career and life skills training, counseling, and crisis/behavior interventions.

7) Support services such as child care, medical care, and substance abuse awareness programs

8) Incorporation of on-going collaborative resources through partnerships with vocational schools and youth work service organizations to meet the social, emotional, career awareness, and academic needs of the student (OTAC, 2008).

In addition to meeting these criteria, the three selected alternative schools have documented significant improvements in student grades, achievement test scores, numbers of courses passed, attendance, and fewer disciplinary referrals. All three schools also provide support for educational continuance in higher education, career technical education, or the military. It should be noted, however, that while all three schools included in this study share the aforementioned characteristics, various individual differences exist among the schools. Alternative schools, by their nature, are inherently designed to adapt to the unique needs of its' students. Local school district requirements, the availability of community resources, and funding largely dictate the types and varieties of services provided (J. Godwin, OTAC senior evaluator, personal

communication, June 11, 2009). Descriptive narratives in the Chapter IV provide greater detail regarding each alternative school's unique features and school climate.

Measures

Demographics. A demographics questionnaire (Appendix A) was used to collect participant information regarding age, gender, race, and number of credits earned.

Perceived Autonomy, Competence, & Relatedness Measure. Students perceived autonomy, competence, and relatedness support were assessed collectively by the Basic Psychological Needs Scale (Deci & Ryan, 2000), titled "Feelings I Have" (Appendix B), adapted for a school setting from the Basic Needs Satisfaction in General (Deci & Ryan, 2000). Twenty-one items on this survey asked students to rate on a Likert type scale of 1 ("not at all true for me") to 6 ("very true for me") how much the student agreed that it was true for him or her. Seven items assessed perceived autonomy support. Sample items for autonomy support included, "I feel like I am free to decide for myself how to live my life" and "I generally feel free to express my ideas and opinions at this school". Six items assessed perceived competence. Sample items for perceived competence included, "People I know tell me I am good at what I do" and "At this school, I have been able to learn interesting new skills recently". Eight items assessed perceived relatedness. Sample items included, "I really like the people I interact with at this school" and "I consider the people I regularly interact with at this school to be my friends". A higher score indicated the statement was very true for the student.

Academic Engagement Measures: Affective Engagement (Positive and Negative), Cognitive Engagement, Behavioral Engagement. Students' affective engagement was measured by scores on the Brief Measure of Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988) (Appendix C). This instrument measured two dominant dispositional dimensions of mood: positive affect and negative affect. The 20-item self-report listed 10 positive affects (interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive and active) and 10 negative affects (distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid). Students rated each item on a Likert-type scale ranging from 1 ("very slightly or not at all") to 5 ("extremely"), based on the extent the student had felt this emotion during the past week at school.

A score for Positive Affect (PA) was obtained by summing the positive affect items (interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive and active). A score for Negative Affect (NA) was obtained by summing the negative affect items (distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid). High PA indicated the degree to which a student experienced pleasurable engagement with the environment, while high NA indicated distress and unpleasurable engagement (Crawford & Henry, 2004). Acceptable reliabilities have been indicated ($\alpha = .871$) for both PA and NA (Crawford & Henry; Watson et al., 1988). Watson et al. has also found excellent convergent and discriminate correlations with other mood scales (as cited in DePaoli & Sweeney, 2000, p. 562).

Students' cognitive engagement was measured by "Study Strategies" (Miller et al., 1996) (Appendix D). This survey assessed students' use of academic self regulation strategies and persistence on school related tasks. A six point Likert-type scale ranging from 1 ("strongly disagree that it is true of you at this school") to 6 ("strongly agree that it is true of you at this school"). A high score indicated the student strongly agreed the statement was true of him or her. Seven items assessed academic self regulation items. Sample items included, "I organize my study time well" and "When I study, I take note of the material I have not mastered". Three items measured persistence. Sample items included, " When I am doing a difficult assignment in school, I keep working on it until I think I have solved it" and "When I read something in a book that doesn't make sense, I skip it and hope that the teacher explains it in class" (reverse coded). Miller et al. reported acceptable alpha reliabilities ranging from .78 - .80 for the academic self-regulation subscale and .75 - .81 for the academic persistence subscale with their sample of high school students.

Behavioral Engagement. Behavioral engagement was measured from students' school records of the following: number of absences, participation in extracurricular activities, and disciplinary referrals for non-compliance with school policies. High rates of truancy and disciplinary referrals indicated less behavioral engagement, whereas high rates of attendance and extracurricular participation indicated greater behavioral engagement.

Regulatory Styles. The academic version of the Self Regulation Questionnaire (SRQ-A) (Ryan & Connell, 1989), titled "Why I do things" (Appendix E), was used to assess students' self regulatory motivational styles. This 32-item survey is divided into

four sub-sections that ask students to rate their reasons for doing homework, class work, answering hard questions in class, and trying to do well in class. Students were asked how much they agreed that the statement was true of them at their school. Responses were marked following a four-point Likert format with 4 for "very true", 3 for "sort of true", 2 for "not very true" and 1 for "not at all true". A higher score indicated a higher endorsement of one of the four regulatory styles: external regulation, introjected regulation, identified regulation or intrinsic motivation. Ryan and Connell reported subscale alphas ranging from .62 to .82.

To create a composite score for the four regulatory style subscales, the Relative Autonomy Index (RAI), scores were weighted. The external and intojected regulation styles were weighted negatively and the identified and intrinsic styles were weighted positively using the following formula: 2 X Intrinsic Motivation subscale score + Identified Regulation subscale score - Introjected Regulation subscale score - 2 X External Regulation subscale score (Ryan & Connell, 1989). The composite score derived from the RAI formula describes the level of autonomous behavior. A higher positive Relative Autonomy Index indicates a more autonomous behavioral style. A higher negative Relative Autonomy Index indicates a more non-autonomous behavioral style.

Achievement Measure. Each student's cumulative grade point average at the end of the school year at the alternative school was used as a measure of academic achievement.

Autonomy Supporting Climate. The presence of an autonomy supporting climate within each of the alterative schools was assessed through classroom

observations of teacher behaviors using an observational protocol (See Appendix "G") adapted from the Reeve & Jang (2006) study. The 11 autonomy supportive teacher behaviors were organized in regard to *instructional behaviors* (time spent listening; time allowing students to work in own ways; time allowed for student talking), *conversational statements* (asking what the student wants; providing a rationale, particularly for uninteresting activities; providing informational feedback; offering hints rather than giving answers; offering encouragement; being responsive to student generated questions) and *choice of seating arrangements* (Reeve, 2002, p. 187). These teacher behaviors have demonstrated positive correlations with perceived autonomy support (Reeve, 2002; Reeve & Jang, 2004)

A contrasting list of 10 controlling teacher behaviors were similarly organized by *instructional behaviors* (time teacher spent talking; time teacher spent monopolizing learning materials; exhibiting solutions), and *conversational statements* (praise given as contingent reward; uttering solutions; uttering directives or commands; making should/ought statements; deadline statements; criticizing the student) (Reeve, 2002, p. 187).

The presence or absence of each of these autonomy supporting or controlling teacher behaviors was indicated by a "yes" or "no" on the checklist during each classroom observation. The percentages of autonomy supporting and controlling behaviors were calculated for each classroom, and then summarized for each school to derive an overall index of autonomy support or control.

Procedure

During the second six weeks of the semester, principals at each school were asked to select four classes for observation that would be representative of an "average" class at that school. (An "average" class was described as one in which the teacher was not a novice teacher, nor an exceptionally "expert" teacher.) Observations of the four classes were conducted during the month prior to data collection in each school. Teachers were notified in advance regarding the observations and informed that the purpose was to enable me to have a better understanding of what alternative school classrooms were like. All observations were conducted mid week during morning classes. The reports of each individual class observation are reported in Appendix "G".

Approximately one week before data collection at each school, each principal provided a tour of the school. I was introduced to all teachers I had not met during the classroom observations. All teachers were provided a written overview of the general purposes of the study. A time line was established to announce the study to the students and collect data on a class-by-class basis. The following week, in each classroom, I briefly presented the study's purpose and the value of student input in assisting alternative schools to become even better. Students were also informed that their responses would be confidential. Students were invited to participate and received informed consent forms. Students were asked to return their consent forms signed by a parent or guardian within the next two days to their teacher, if they wished to participate in the study. Adult students were provided adult student consent forms. I returned two days later to collect the consent forms and distribute assent forms and surveys on a class-by-class basis to students who wished to participate.

Students were encouraged to ask any questions if they did not understand any part of the survey. Students were also reminded their answers were confidential, and that they did not have to answer any of the questions if they chose not to. The surveys were administered during regular class time and students took approximately 15 to 20 minutes to complete. The teachers remained in the classroom. When the students were finished with the survey, they placed it in a manila envelope in the classroom. I returned to each classroom to pick these up from each teacher after administering the rest of the surveys. This procedure was repeated at each school.

Due to a low response rate at all three schools (most students simply forgot to return the signed parental or guardian informed consent form), I returned the following month to all 3 schools and again invited all students who had not previously participated. On the second data collection in all schools, I was stationed in the schools' cafeteria areas. Students who wished to participate brought signed informed consent forms to the cafeteria at different times during the school day, when the cafeteria was vacant. Students completed student assent forms and the surveys in the cafeteria.

Chapter IV

Results

The purpose of this study was to determine if academically at risk students' perceptions of motivational variables in an alternative school setting predicted significance variance in academic engagement, self-regulatory styles, and achievement. In this chapter, the results of this study are presented and described. First, the demographics of the sample are described, followed by a description of the data used to indicate behavioral engagement and achievement. Next, evidence for the reliability of the measures and descriptive statistics for all scales used is reported. This is followed by the correlation and regression analyses that address the research questions. Lastly, following the presentation and description of the statistical information, the qualitative findings that address the final research question are presented.

Demographics and descriptive statistics

The participants were 186 students enrolled in three alternative high schools. Ninety-four participants were female (50.5%) and 92 participants were male (49.5%) and the majority of were white (N = 110, 59.1%). The frequencies and percentages for the other ethnicities are as follows: African American (N=28, 15.1%), American Indian (N=21, 11.3%), Hispanic/Latino/a (N=16, 8.6%), Multiracial (N=7, 3.8%), and Asian (N=4, 2.2%). The minimum participant age was 14 and the maximum age was 20 (M = 17.24, SD = 1.07).

Data were collected on student absences, disciplinary referrals, extracurricular activity participation, and cumulative grade point averages while enrolled in the

alternative school. For student absences, the minimum number of absences was 0 and the maximum was 50 (M = 13.31, SD = 9.52). For disciplinary referrals, the minimum number of discipline referrals was 0 and the maximum was 36 (M = 3.27, SD = 6.49). For alternative school GPA, the minimum GPA was 0 and the maximum was 4.0 (M = 2.90, SD = 0.76). For extracurricular activity participation, the majority (N = 108, 58.1%) of participants were *not* involved in extracurricular activities. The types of extracurricular activities available, the frequencies and percent of student participation, are summarized in Appendix "F".

Subscale Reliability

Cronbach Alpha reliability coefficients (reported in Table 1) were calculated for each scale to assess internal consistency. Initial Cronbach alphas for the autonomy and competence sub-scales of the Basic Psychological Needs Scale, (Deci & Ryan, 2000), indicated low reliabilities of .48 and .40 respectively. Inspection of data led the researcher to explore the effect of eliminating reverse coded items in these subscales. By removing reverse coded items 4, 11, and 20 of the autonomy scale, and reverse coded items 3, 15, and 19 of the competence scale, the reliabilities improved to .66 and .60 respectively. Although these alphas are modest, they are within the range of .60 to .75, reported by other studies using these subscales or items based on them (see Gagné, 2003; Meyer, Enström, Harstveit, Bowles, & Beevers, 2007).

Items 1-8 of the self regulatory styles measure (SRQ-A) (Ryan & Connell, 1989) were also dropped. These items asked students to address reasons for doing homework. During data collection it was discovered that students at School "B" were

not assigned homework. To avoid a systematic pattern of missing data, these items were eliminated from the analysis.

Subscale Intercorrelations

A correlation matrix with Pearson r correlations, using list wise deletion (N=138) was assessed to see if relationships existed between variables and to address research questions 1-5. The categorical extracurricular participation variable was treated as a dichotomous variable and included in the correlation matrix since the Pearson r is mathematically equivalent to the point-biserial correlation when a correlation is computed between a continuous and dichotomous correlation (Tabachnick & Fidell, 1996). The correlation matrix is shown in Table 2.

Table 1

Descriptive Statistics for all scales and subscales

Scales and Subscales	α	M	Min-Max	SD	N of Items
Positive Affect	.871	3.8	1-5	0.75	10
Negative Affect	.871	1.5	1-3	0.40	10
Autonomy	.669	4.5	1-6	0.69	4
Competence	.604	4.5	1-6	0.66	5
Relatedness	.838	4.6	1-6	1.20	8
External Regulation	.806	2.4	1-4	5.17	7
Introjected Regulation	.831	2.6	1-4	5.21	7
Identified Regulation	.736	3.1	1-4	3.36	5
Intrinsic Motivation	.832	2.5	1-4	4.15	5
Relative Autonomy Index		0.6	-4.09 to 7.00	2.24	24
Cognitive Engagement	.849	2.9	1-6	.936	10
GPA		2.9	0-4.0	.759	
Extracurricular Activity		0.5	0-1	0.500	
Disciplinary Referrals		3.3	0-36	6.500	
Absences		13.3	0-50	9.500	

Statistically significant correlations were identified among the basic needs variables (autonomy, competence, and relatedness) and cognitive engagement, affective engagement, behavioral engagement, self-regulatory styles, and achievement. Among the perceptions of autonomy, competence, and relatedness, only competence was significantly associated with cognitive engagement. The overall Relative Autonomy Index, as well as the intojected, identified, and intrinsic regulatory styles were also associated with cognitive engagement. All basic needs variables and regulatory styles, with the exception of external regulation, were

moderately associated in a positive direction with positive affect; however, only autonomy and relatedness were negatively associated with negative affective engagement. Cognitive engagement was not intercorrelated with any of the behavioral engagement indicators except for a small association with the number of days absent, which is puzzling.

Consistent with SDT (Ryan & Deci, 2000a), positive affective engagement correlated with all the basic needs variables, identified, and intrinsic regulatory styles, as well as with the Relative Autonomy Index. The association of positive affective engagement with an introjected regulatory style (.307) would seem inconsistent with SDT assumptions, however. Within the SDT framework, negative emotions such as anxiety, guilt, and contingent self approval are characteristically associated with this regulatory style (Deci & Ryan, 1985; Levesque et al., 2004; Ryan & Deci, 2000b). Furthermore, Self-Determination Theory posits that the social environment influences the behavioral regulation that individuals develop (Deci & Ryan, 2000) and introjected behaviors may be exhibited to gain social approval, self worth, or to avoid disapproval (Ryan & Deci, 2000a). It is possible that, as these academically at risk students experience satisfaction of their basic needs within a warm, supportive alternative school context, they begin to partially internalize school values. Thus, while the introjected regulatory stage is not optimal, it indicates that these students are in the initial stage of internalization.

The modest correlations among positive affective engagement, GPA, and extracurricular activity participation are consistent with some prior research. In school settings, positive affective engagement is expressed as interest, enjoyment,

happiness, enthusiasm for learning, and valuing of school (Connell & Wellborn, 1991; Reeve, 2002; Skinner & Belmont, 1993). It has also has been associated with a more intrinsic regulatory style (Pekrun, et al., 2002; Reeve, 2002), which may in turn facilitate a greater interest in academic achievement, and thus higher GPA. As previously discussed, positive affective engagement may be fostered by extracurricular participation which provides opportunities for positive school relationships (Wentzel & Caldwell, 1997), and promotes a connection and identification with school values (Battistich et al., 1995; Noddings, 1992). Extracurricular activity participation, in turn, has been positively correlated with increased positive affective engagement (Ryan, Stiller, & Lynch, 1994) and higher GPA (Barber et al., 2001).

A negative correlation was indicated between negative affective engagement, autonomy (-.305), and relatedness (-.221), indicating that negative affect increases as perceptions of autonomy and relatedness decrease. This association is consistent with SDT's premise that a perceived lack of basic needs fulfillment results in psychological "ill" being, rather than optimal psychological "well-being" (Ryan & Deci, 2000b; Ryan & Deci, 2002). Not surprisingly, a modest positive relationship between disciplinary referrals and negative affective engagement was also found.

Among the behavioral engagement indicators, extracurricular activity participation was associated with autonomy and competence, but oddly not with relatedness. As discussed previously, extracurricular activities may provide opportunities to establish positive relationships with peers and teachers at school. The lack of association with relatedness may be due to the types of extracurricular

activities offered at the alternative schools (see Appendix "F"). Extracurricular options at two of the schools were limited to a service organization, Key Club, or participation in the home school's athletics. Participation in athletics also included a GPA requirement for eligibility; therefore academic achievement was encouraged. The third school offered extracurricular activities focusing on the development of a skill or craft. In light of the emphasis of these activities on leadership or other skill development, the associations with autonomy and competence are plausible.

Extracurricular activity participation was also positively associated with identified (.263) and intrinsic (.306) regulatory styles, as well as the Relative Autonomy Index (.313). These associations could indicate that extracurricular participation can potentially strengthen identification with school norms and values, perceived autonomy and competence. Conversely, identification with school values, as well as perceived autonomy and competence could encourage students' extracurricular participation. The slight, negative correlation of the number of absences with an introjected regulatory style (-.184) might indicate avoidance of school to evade feelings of anxiety or other negative self-related affects.

Regarding the achievement index of cumulative grade point average, GPA was moderately related to perceived competence (.198), relatedness (.219), and an identified regulatory style (.226). While the association with an identified regulatory style indicates a connection with the merits of academic achievement (Reeve, 2002), it also indicates a more autonomous regulatory style. Oddly, however, there was no association between autonomy and GPA. Furthermore, it is surprising that neither intrinsic motivation, cognitive engagement, nor the Relative Autonomy Index

correlated with GPA, as these too are normally associated with academic achievement (Gottfried, 1985; Gottfried, 1990; Reeve, 2002). Further analysis, such as multiple regression, is needed to further investigate the complexity of these relationships.

In concordance with Self Determination Theory (Ryan & Deci, 2000a), the overall Relative Autonomy Index (RAI) correlated moderately with perceptions of autonomy (.379), and competence (.186) and, to a lesser degree, with relatedness (.233). Also consistent with SDT, perceptions of autonomy correlated negatively with an external regulatory style and positively with intrinsic motivation, indicating that a student feels less externally controlled and more intrinsically motivated as a sense of autonomy increases.

Although the magnitude of the correlations discussed above are relatively small, they nonetheless provide modest support for the utility of the SDT (Ryan & Deci, 2000a) framework for understanding how students' perceptions of autonomy, competence, and relatedness are associated with academic engagement, self-regulatory styles, and achievement in alternative school settings. I will next discuss the regression findings as they specifically relate to the first five research questions.

Table 2

Pearson Product Moment Correlations Among Scales and Subscales

	PA	NA	Auton	Comp	Related	Extern	Inroject	Identif	Intrins	RAI
PA	-	.167	.259**	.550**	.404**	.153	.307**	.347**	.415**	.201*
NA	.167	-	-.305**	-.053	-.221**	.101	.059	-.118	-.016	-.137
Auton	.259**	-.305**	-	.468**	.566**	-.205*	-.088	-.095	.245**	.379**
Comp	.550**	-.053	.468**	-	.533**	.076	.235**	.319**	.301**	.186*
Related	.404**	-.221**	.566**	.533**	-	-.047	.212*	.179*	.298**	.233**
Extern	.153	.101	-.205*	.076	-.047	-	.677**	.304**	.311**	-.592**
Introject	.307**	.059	-.088	.235**	.212*	.677**	-	.507**	.499**	-.281*
Identif	.347**	-.118	-.095	.319**	.179*	.304**	.507**	-	.593**	.361**
Intrins	.415**	-.016	.245**	.301**	.298**	.311**	.499**	.593**	-	.532**
RAI	.201*	-.137	.379**	.186*	.233*	-.592**	-.281**	.361**	.532**	-

Note. PA = Positive Affect; NA = Negative Affect; Auton = Autonomy; Comp = Competence; Related = Relatedness; Extern = External Regulation; Introject = Introjected Regulation; Identif = Identified Regulation; Intrins = Intrinsic Regulation; RAI = Relative Autonomy Index; Cognitive = Cognitive Engagement; GPA = Cumulative Grade Point Average; Extra = Extracurricular Activity Participation; Discipl = Number of Disciplinary Referrals; Abs = Number of Absences while enrolled at alternative school

* indicates $p < 0.05$, ** indicates $p < 0.01$.

Table 2 (Continued)

	PA	NA	Auton	Comp	Related	Extern	Introject	Identif	Intrins	RAI
Cognitive	.156	.004	.127	.225**	.150	.085	.245**	.434**	.407**	.290**
GPA	.244**	.018	.071	.198*	.219*	.030	.157	.226**	.126	.087
Extra	.259**	.003	.240**	.202*	.125	-.044	.063	.263**	.306**	.313**
Discipl	-.086	.180*	-.022	-.010	-.092	-.036	-.130	-.277**	-.142	-.120
Abs	.052	.104	.161	.109	.063	-.108	-.184*	-.039	.139	.226**

Note. PA = Positive Affect; NA = Negative Affect; Auton = Autonomy; Comp = Competence; Related = Relatedness; Extern = External Regulation; Introject = Introjected Regulation; Identif = Identified Regulation; Intrins = Intrinsic Regulation; RAI = Relative Autonomy Index; Cognitive = Cognitive Engagement; GPA = Cumulative Grade Point Average; Extra = Extracurricular Activity Participation; Discipl = Number of Disciplinary Referrals; Abs = Number of Absences while enrolled at alternative school

* indicates $p < 0.05$, ** indicates $p < 0.01$.

Table 2 (Continued)

	Cognitive	GPA	Extra	Discipl	Abs
Cognitive	-	.124	.102	-.039	.216*
GPA	.124	-	.292**	-.128	-.086
Extra	.102	.292**	-	-.177*	.029
Discipl	-.039	-.128	-.177*	-	.214
Abs	.216*	-.086	.029	.214	-

Note. PA = Positive Affect; NA = Negative Affect; Auton = Autonomy; Comp = Competence; Related = Relatedness; Extern = External Regulation; Introject = Introjected Regulation; Identif = Identified Regulation; Intrinsic= Intrins Regulation; RAI = Relative Autonomy Index; Cognitive = Cognitive Engagement; GPA = Cumulative Grade Point Average; Extra = Extracurricular Activity Participation; Discipl = Number of Disciplinary Referrals; Abs = Number of Absences while enrolled at alternative school

* indicates $p < 0.05$, ** indicates $p < 0.01$.

Multiple Regression Analyses

Since the independent variables were selected based on theory, a standard regression method with simultaneous entry was used to examine their combined predictive power as a set (Gall, Borg, & Gall, 1996). Prior to analysis data were inspected for data entry accuracy, outliers, and missing values. Three cases with more than ten percent of data missing were eliminated from the data set. Other missing values were randomly distributed, totaled less than five percent, and were deemed to have minimal impact on the analysis (Schafer & Graham, 2002).

Multivariate outliers were identified using studentized residuals. Cases with studentized residuals greater than +3.0 or -3.0 standard deviations from the mean were eliminated and the regression model was repeated to determine if the outlier(s) had a significant effect on the fit of the model. The assumptions for multiple regression regarding linearity, homoscedasticity, and normality of distribution were examined for each regression.

A series of regression analyses were used for answering the first five research questions when the correlations provided support for computing regressions. Research question 2 involved two regressions, one for positive affective engagement and another for negative affective engagement. Research question 3 was assessed with a logistic regression to predict the categorical variable of extra curricular activities. Thus, a total of six regression analyses were conducted.

In order to control for Type I error when multiple tests are being performed with a single sample, a Bonferroni adjustment was used to assess the significance of the regression equations (Tabachnick & Fidell, 1996). This adjustment yielded a significance

value of .008333 (.05/6). Without this correction, a 26.49% chance of finding one or more invalid significant difference in these six regressions would exist.

In order to evaluate the significance of the individual Beta values, I used a less stringent criterion. If the significance value was less than .017 (.05/3 to account for three predictors) I counted is as significant.

Research Question 1: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the cognitive engagement of at risk students in an alternative education setting? To examine research question 1, examination of the correlation matrix (Table 2) revealed that perceptions of competence were significantly associated with cognitive engagement. A linear regression was conducted to assess the variance these perceptions of autonomy, competence, and relatedness accounted for as a group, in students' cognitive engagement. The absence of multicollinearity was assessed using Variance Inflation Factors (VIF). The results of the regression were significant, F (3, 159) = 5.19, p = 0.002; the motivational variables (perceptions of autonomy, competence, and relatedness) accounted for (R^2) 8.9% of the variance in cognitive engagement. For the overall model, only competence yielded a significant Beta value (see Table 3) suggesting that perceptions of competence significantly contribute to 22.8% of the variance in cognitive engagement. Neither perceptions of autonomy (β = .022) nor perceptions of relatedness (β = .089) were significant predictors of cognitive engagement.

Table 3

Linear Regression on Autonomy, Competence and Relatedness Predicting Cognitive Engagement

	B	SE	β	*t*	VIF	Sig.
(Constant)	2.238	0.543		4.123		.000
Autonomy	.029	0.132	.022	.219	1.681	.827
Competence	.315	0.129	.228	2.446	1.511	.016
Relatedness	.082	0.092	.089	.890	1.758	.375

Research Question 2: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in a) positive affective engagement and b) negative affective engagement? To investigate research question 2, two separate multiple regression equations were computed to assess two indicators of affective engagement: a) positive affect and b) negative effect. The first regression assessed if perceptions of autonomy, competence, and relatedness predicted affective engagement. The absence of multicollinearity using Variance Inflation Factors (VIF) was confirmed for all independent variables. The results of the regression were significant, F (3, 156) = 26.016, p = .000. The motivational variables (perceptions of autonomy, competence, and relatedness) accounted for (R^2) 33% of the variance in the overall model. These results, presented in Table 4, suggest that perceptions of competence and relatedness, with Beta weights of .471 and .223 respectively, significantly contribute to the prediction of positive affective engagement. Perceptions of autonomy, however, were not significantly predictive.

Table 4

Linear Regression on Autonomy, Competence and Relatedness Predicting Positive Affective Engagement

	B	SE	β	*t*	Sig.	VIF
(Constant)	.629	.381		1.652	.101	
Autonomy	-.090	.090	-.083	-.993	.322	1.649
Competence	.529	.091	.471	5.827	.000	1.528
Relatedness	.165	.065	.223	2.554	.012	1.791

Another linear regression was conducted to assess *Research Question 2b): Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in negative affective engagement?* These results were also significant, F (3, 150) = 5.87, p = 0.001, with the motivational variables (perceptions of autonomy, competence, and relatedness) accounting for (R^2) 11% of the variance in negative affective engagement. The results of the regression presented in Table 5 suggest that only perceptions of autonomy are significantly negatively correlated (p = .007) with negative engagement, meaning that as perceptions of autonomy decrease, negative affective engagement increases. Furthermore, perceptions of autonomy contribute to 26.8% (β = .268) of the variance in negative affective engagement. Perceptions of competence and relatedness were not significant predictors.

Table 5

Linear Regression on Autonomy, Competence and Relatedness Predicting Negative Affective Engagement

	B	SE	β	*t*	Sig.	VIF
(Constant)	2.194	.259		8.480	.000	
Autonomy	-.164	.060	-.268	-2.748	.007	1.592
Competence	.046	.061	-.071	.760	.448	1.465
Relatedness	-.054	.042	-.129	-1.290	.199	1.657

Research Question 3: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in behavioral engagement, as indicated by a) number of disciplinary referrals, b) extracurricular activity participation, and c) number of absences, while enrolled at an alternative school?

Examination of the correlation matrix (Table 2) revealed that the motivational variables were significantly correlated only with the behavioral engagement indicator of extracurricular activity participation. Therefore, the behavioral indicators of disciplinary referrals and number of absences were not analyzed in a regression equation.

To examine extracurricular participation in research question 3b, a logistic regression was conducted, rather than a linear regression, as extracurricular participation was converted to a dichotomous variable (i.e. a student either participated in extracurricular activities, or did not participate in extracurricular activities). The results of the regression presented in Table 6 were not significant, x^2 (3) = 6.183, p = 0.103, with the motivational variables accounting for only (R^2) 4.0% of the variance in extracurricular activity participation. None of the motivational variables were significant predictors of the

behavioral engagement indicator, participation in extracurricular activities, although the autonomy perception (p = .049) variable was closest to significance.

Table 6

Logistic Regression on Autonomy, Competence and Relatedness Predicting Extracurricular Activities

	B	SE	Wald	Sig.	Exp(B)
Autonomy	.611	.311	3.863	.049	1.841
Competence	.070	.299	.055	.815	1.073
Relatedness	-.068	.214	.101	.750	.934
(Constant)	-3.223	1.302	6.132	.013	.040

Research question 4: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the self-regulatory styles of at risk students in an alternative education setting? To examine research question 4, a linear regression was conducted to assess if perceptions of autonomy, competence, and relatedness predicted self regulatory styles as indicated by the composite Relative Autonomy Index. The results of the regression were significant, F (3, 154) = 9.169, p = .000. Perceptions of autonomy, competence, and relatedness accounted for (R^2) 15.2% of the variance in the Relative Autonomy Index. The results of the regression presented in Table 7 suggest that perceptions of autonomy accounted for 33.4% (β = .334) of the variance in self regulatory styles as measured by the Relative Autonomy Index composite score.

Table *7*

Linear Regression on Autonomy, Competence and Relatedness Predicting Self Regulatory Styles Composite (Relative Autonomy Index) Composite (Relative Autonomy Index)

	B	SE	β	*t*	Sig.	VIF
(Constant)	-5.214	1.304		-4.000	.000	
Autonomy	1.093	.311	.334	3.518	.001	1.637
Competence	.093	.304	.011	.127	.899	1.469
Relatedness	.170	.220	.076	.774	.440	1.738

Research Question 5: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the academic achievement, as indicated by GPA, of at risk students in an alternative education setting? To examine research question 5, a multiple regression was conducted to assess if perceptions of autonomy, relatedness and competence predicted students' cumulative grade point averages while enrolled in the alternative school. The results of the regression presented in Table 8 suggest that none of the motivational variables (perceptions of autonomy, competence, or relatedness) were significant predictors of GPA. The results of the regression were not significant, F (3, 161) = 3.58, p = 0.015, given the more stringent Bonferroni correction alpha of .008. The motivational variables accounted for (R^2) 6.3% of the variance in GPA, but none uniquely predicted GPA. It is interesting to note that the largest Beta value (β = .225) is associated with perceptions of relatedness.

Table 8

Linear Regression on Autonomy, Competence and Relatedness Predicting GPA

	B	SE	β	*t*	Sig.	VIF
(Constant)	1.946	.459		4.239	.000	
Autonomy	-.087	.110	-.077	-.786	.433	1.657
Competence	.119	.108	.102	1.104	.271	1.476
Relatedness	.173	.077	.225	2.240	.026	1.730

Research Question 6: Do alternative schools have an overall climate that supports at risk students' autonomy in an alternative education setting? Observations of four different classes within each of the three alternative schools were conducted following an observational protocol similar to that of Reeve & Jang (2006) (See appendix "G"). For checklist items assessing a specific amount of time devoted to particular behavior, a percentage of the total class period was used instead. If the "time teacher talking" (as in a controlling behavior) was half the class period or greater, the behavior was marked "Yes", indicating a controlling behavior. The number of autonomy supporting behaviors and controlling behaviors was tallied for each classroom observed. These individual classroom totals were summed and a percentage of autonomy supportive and controlling behaviors was calculated.

Overall, the presence of an autonomy supporting climate within the alterative schools was supported by these classroom observations of teacher behaviors. The percentages of autonomy supporting behaviors and controlling behaviors are reported in Table 9. Following Table 9, narrative descriptions of the organization, instruction, curriculum, and school climate of each school are provided. The accompanying individual observation reports for each classroom in each school are located in Appendix "G".

Table 9

Autonomy Supporting and Controlling Teacher Behaviors

	Autonomy Supporting Teacher Behaviors	Controlling Teacher Behaviors
School A	70%	18.00%
School B	75%	0.75%
School C	55%	0.75%
Averages	67%	19.50%

Narrative Description of Alternative School "A". Alternative school "A" is located in a relatively affluent, predominately White suburb with a population of 71, 643 and a mean income of $65,230. Only 2.4% of the population receives public assistance income and 94.2% has a high school diploma or higher (U.S. Census, n.d.). The school district contains three, four-year public high schools serving approximately 1,375 students per high school, with a total of 4,142 students. Within this school district, alternative school "A" serves a maximum of 125 students from the three high schools.

Alternative school "A" allows enrollment only during each six-week block of classes. To earn academic credit, students must not only demonstrate competency in course work, but also fulfill the required seat time (i.e. a designated number of hours in class). The current administrator is in his third year as principal, having previously served as vice principal in one of this districts' large high schools. Each of the 12 full time teachers is certified and licensed by the state. Two full time counselors provide personal and academic counseling for the student body, in addition to teaching a daily "Teen Leadership" class which focuses on life skills and career training. The two counselors also sponsor the school's only extracurricular activity, "Key Club", an international service

learning organization for high school students. The only other extracurricular option is participation in a home school's athletic program. Students are permitted to continue participation in their athletic program and allowed to leave the alternative school 10 minutes early for practices.

The school is located in an old two-story building, formerly used as a regional service center. In spite of the aging exterior, the interior has been renovated with brightly painted walls and modern furnishings. Student art work is showcased in the main entry way. Glassed-in office spaces and hallways give an "open" appearance, yet all doors leading to these areas are locked while school is in progress. Only the main entrance, leading directly to the front office, is kept unlocked. Consequently, late arriving students must first pass through the front office to account for their tardiness and receive "admit passes" in order to get to their classes. This process often creates a chaotic "bottle-neck" of students lining up in front of the registrar's desk.

The front office is the hub of activity before classes start each morning. It houses the registrar, the principal's office, the administrative assistant's office, as well as the copy machine and teachers' mailboxes. It is also where the School Resource Officer (a full-time, uniformed police officer from the local police force) is stationed when not roaming the campus.

The daily school schedule and class format mirrors that of a traditional public high school. Class periods are 55 minutes long with five minutes between classes, signaled by a bell. Students may leave the campus during the 30 minute lunch period. The majority of classes use a whole group and/or small group instruction format. A few classes predominantly use individualized instruction.

All classroom doors are kept locked during class sessions for students' security. Most classrooms are arranged with the teacher desk near the front and student desks in rows. Two classrooms have long tables, rather than student desks, arranged in a "U" shape in the room. Surveillance cameras are located in a ceiling corner in each classroom, as well as in the halls and cafeteria. Fifteen is the maximum number of students in any classroom.

In regard to overall school atmosphere, warm, friendly interchanges before class and between class periods were observed between teachers and students, and between teachers and teachers. Clear distinctions between the roles of teachers and students were indicated, however. Students addressed teachers with "Mr." or "Ms." while teachers addressed students by first names. Teachers wear jeans only on Fridays. While the school security procedures seemed stringent, teachers and students alike seemed oblivious to them.

To assess school classroom climate as autonomy supportive or controlling, observations of four classes were conducted. The principal was asked to select classes for observation that would be representative of an "average" class at the school, meaning that the teacher was not a novice teacher, nor an exceptionally "expert" teacher. All observations were conducted mid week during morning classes. These reports are located in Appendix "G".

Narrative Description of Alternative School "B". Alternative school "B" is located in the inner city of a large urban area with a population of approximately 396,000 and a median income of $36,000.00. Eleven percent of this population is living below the poverty level and 4.4% receive public assistance. Eighty-four percent of the population has a high school education or higher (U.S. Census Bureau, n.d.).

This school district is the largest in the state, supporting nine high schools with enrollments ranging from 701 to 1,263 students per school. Alternative school "B" is one of three alternative high schools in the district and operates at a capacity of 90 students, with a waiting list of approximately 20 students per six-week session. It permits enrollment only during the start of each six week session, and does not accept students who are currently suspended from their home schools. It operates with both public and private funds.

School "B" is housed in an old, former high school building. A security officer sits at a desk and monitors the front entry and visitor sign-in procedures. The front office houses the school director's office, registrar, copy machine, and teacher mail boxes. A large glass trophy case in the entryway displays numerous awards the school and individual students have received. The hallway walls are illuminated with large, colorful, student-produced murals. Student art work also sprawls across classroom entrances and lockers. Before school, students, teachers, and counselors casually visit in the wide hall way areas. The overall atmosphere is busy, yet relaxed. The beginning of classes is signaled by a bell.

School "B" has a faculty of nine certified, licensed teachers and six certified counselors. One teacher recently achieved National Board Certification. The ratio of students to teachers is 13:1 and students to counselors is 15:1. School "B" has been in operation for 36 years and is one of the oldest alternative schools in the state. School "B" is also unique in regard to its' higher-than-average number of counselors who provide individual and group therapeutic counseling. During school hours, students meet each morning with their counselor in a group setting to discuss any personal or school related

concerns. This setting is called “homeroom” and lasts from 8:30 a.m. until 8:45 a.m. Counselors also see students for at least one hour of individual counseling per week. During these sessions, students are provided strategies for dealing with emotional problems that may exist. Substance abuse and treatment may also be addressed. Counseling sessions include techniques such as cognitive restructuring, reframing, journaling, and cognitive and behavioral homework assignments. Additional monthly family support group meetings are provided, as needed, for families of students. Counselors may serve as liaisons, connecting families with community social service resources. Trained volunteer mentors from the community provide additional support for students, meeting one hour per week with a student during school hours.

A staff meeting including teachers, counselors, and the school director is held each Tuesday afternoon, after classes are dismissed. During these meetings, individual students' progress toward academic and counseling goals are discussed. Teachers also submit weekly lesson plans for the upcoming week, for the director's review. Teachers connect their daily lessons to an on-going, school wide, curriculum theme developed collaboratively for that semester. The theme for the current semester was "Sacrifice and Legacy" and all teachers made a connection to that theme in their daily lesson plans.

Similar to school "A", most of the classroom instruction is delivered in a whole group and/or small group instruction format, with a few students working independently on self-paced credit recovery software programs. Larger classrooms have couches and tables arranged as sitting areas in one end of the room, in addition to traditional seating arrangements of long tables with chairs. Smaller classrooms only have room for long

tables for student seating and a teacher desk. Students address their teachers and counselors by first names. Teachers and students dress comfortably and casually.

Students attend 55 minute classes from 8:45 a.m. until 2:05 p.m., Monday through Thursday, and until 12:45 p.m. each Friday. Students are allowed to leave campus during the 35 minute lunch break. Extracurricular activities are available for special interests such as art, chess, creative writing, film making, walking, and Spanish. In conjunction with the local American Red Cross organization, a school sponsored HIV/AIDS and teen pregnancy prevention program provides training for students to become certified as peer educators. Through this program, students receive instruction on making presentations to peers about topics such as pregnancy prevention, HIV, AIDS and STDs. A "Visioning" student group participates in school policy development with the faculty. Additional insights into students' personal circumstances and experiences at this school are provided by the following narratives written by students enrolled in Alternative School "B".

> By the time my mom and step dad moved to [this city] we had moved around so much (several tmes a year) that I had given up on graduating from high school. I was very frustrated and had been disruptive to other students in the previous schools I attended. In [this city], I was enrolled at Will Rogers High School. I only attended two weeks before dropping out. An administrator at the high school suggested [this school]. From my first day at [this school] I experienced a very kind and caring attitude from the staff. This welcoming feeling took the anxiety out of attending. (Student from Alternative School "B")

Another student from this school shares the following:

> Before I came to [this school] I had been in 16 different schools. I got in trouble a lot at school…because I slept in class or skipped school. I didn't want to do the work because the teachers didn't have time for me. I came to [this school] thinking everyone was going to be mean. I thought I'd have to fight a lot. I found it to be just the opposite. Everyone talks to each other. People aren't split into groups. The teachers don't judge me, and they give me one-on-one time. I live with my grandmother and I am a junior and will graduate with the class of 2010. (Student from Alternative School "B")

Narrative Description of Alternative School "C. Alternative school "C" is situated in a rural community with a population of 39,065. This predominantly White (82.5%) community has a median annual income of $25,432, with 13% of the population living below the poverty level and 2.4% receiving public assistance. Ninety-one percent of the population has a high school education or higher (U.S. Census Bureau, n.d.). The school district contains one, three-year high school with an enrollment of 1,152, a junior high with an enrollment of 681, and a middle school with an enrollment of 769 students.

Alternative school "C" serves the secondary students within this school district, as well as those from neighboring districts. Unlike alternative schools "A" and "B", it also provides separate instruction for students in grades six through eight. The principal has served at this school for 17 years. There are nine certified and licensed teachers and two counselors serving 60 to 75 students during the school year. The ratio of students to teachers is approximately 10:1.

Alternative school "C" is also the most flexible of the three alternative schools in

this study in regard to enrollment policy, class schedules, and classroom instruction formats. Enrollment is offered on an "open entry/open exit" basis, meaning accepted students may enroll at any point in the school semester, depending on the availability of open slots. Students receive credit for course work based on competency, rather than by meeting an additional "seat time" requirement. This type of competency-based credit accrual, as well as flexibility in scheduling, allows students to complete credits at their own pace and manage work and family responsibilities.

Similar to the other alternative schools, school "C" is located in an aging, former elementary school building, located near the outskirts of the town. The front office is located immediately to the right of main entrance, and is decorated in a welcoming, "homey" style with matching rugs and curtains, and a dinning table used as a conference table. The principal has served at this school for 17 years. Her office may be accessed through the end of the main office, or from a side door alongside the classrooms. Such an arrangement permits students to walk directly into the principal's office.

The school is well maintained and clean, but lacks the student generated decorating and artwork showcased in schools "A" and "B". "Student friendly" furnishings abound, however, along the hallway leading to classrooms. Bar stools and tables, benches, water coolers, vending machines, and an upright piano are readily available for student use during breaks. Students and teachers dress casually, with teachers wearing jeans and t-shirts. Students address teachers with "Mr." and "Ms".

The classroom doors along this hallway are kept open. No bells signal the end of each 45 minute class period; students merely move to the next class at the designated time. If students loiter in the hallway between classes, a teacher will step out of a classroom and

gently remind them to "get on to class". The school schedule includes breakfast served at 7:30 a.m. and classes held from 8:30 a.m. until 3:15 p.m. Students may eat in the school cafeteria or leave the campus during the 45 minute lunch period. Three days a week, Tuesday, Wednesday, and Thursday, evening classes are offered from 3:15 p.m. until 5:15 p.m.

The open enrollment and flexible scheduling offered at School "C" are important considerations for some students. The following excerpts were gathered from essays written by current students at School "C" as an English assignment. Students were instructed to write about their experiences at "School C". The excerpts provide glimpses into the diversity of students served in the school and the unique challenges and accomplishments they have experienced.

> I work during normal high school hours so high school is out of question. I didn't complete high school in 2007. I wasn't that far away from graduating. My mom is a single parent with two kids, my sister and I. Our father no longer pays child support. That means that my sister and I must support ourselves. That makes life a little difficult...trying to complete school on top of trying to support myself. The only way I can make enough money to support myself is by working from 7:30 a.m. to 6 p.m. [This school] was willing to work with me and my rigorous schedule. Basically I saw no other way of getting through high school, in that I even get another chance for a real diploma means the world to me. (A Student from School "C")

Before I came to [this school] I was at a school where none of the teachers cared about the students. When I did come to [this school] I realized that the teachers are here for the students, not for the money or for themselves. They actually work with the kids and are there for the students. They actually care about what choices we make [and] help us to make better ones. The staff here are almost like all the students' friends [This school] has helped me in many ways with my education. When I do not understand something, they explain it to me in a way where it's understandable and it's very easy to learn when the teachers here help you. (Student from School "C")

The teachers and staff are great and very supportive. They are never too busy for you like teachers in larger schools are. They are always one on one with you to help you to understand what you're trying to learn, and I think that's what students need these days… Sometimes all someone needs is to know that someone cares about their well-being and to feel like they are not alone, and at [this school] students get that and much more.[This school] has opened many doors and created many opportunities for me, like college, and has taught me about being a leader, and to never quit. (Student from School "C").

Chapter V

Discussion

The purpose of this study was to investigate the relationships among students' perceptions of self-determination variables and the outcomes of academic engagement, self-regulatory styles, and achievement in alternative school environments. Collectively, the findings from this study converge to indicate evidence for the predictive associations between perceptions of autonomy, competence, and relatedness and aspects of academic engagement and self regulatory styles. The findings of the relationships among the variables and their impact on the academic outcomes will be discussed in regard to the individual research question. In conclusion, limitations and areas for future research will be discussed.

Summary of Findings by Research Questions

Research Question 1: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the cognitive engagement of at risk students in an alternative school? Although all the motivational variables correlated significantly with cognitive engagement (Table 2) the regression analysis revealed that only perceptions of competence uniquely predicted cognitive engagement. This finding is consistent with prior research indicating a strong positive correlation between academic competence and students' effort, persistence, learning, and achievement (Bandura, 1986; Connell & Wellborn, 1991; Miller et al., 1996; Reeve, 2002; Schunk, 1989b; Schunk, 1991; Skinner & Belmont, 1993). Although perceptions of autonomy support and relatedness were not significantly predictive of cognitive engagement in the present study, the basic needs have been found to foster competency beliefs (Cornelius-White, 2007; DenBrok, Fisher &

Scott, 2005; Englund, Egeland, & Collins, 2008; Reeve, 2002; Reeve & Jang, 2006; Wentzel, 1997). In this sense, perceptions of autonomy and relatedness may be indirectly involved in predicting students' cognitive engagement. In effect, autonomy and relatedness work in tandem to indirectly enhance students' perceptions of competence, which in turn, predicts cognitive engagement.

The predictive relationship of competence perceptions to cognitive engagement is likely a valuable finding for academically at risk students in alternative schools. Since academically at risk students have often experienced repeated academic failure, their perceptions of competence support in an alternative school are very important. Additionally, students who display cognitive engagement possess skills to regulate their learning, set academic goals, and persist. Academically at risk students may be lacking in these skills due to limited exposure to role models outside of school. For those students nearing school completion, the transfer of such skills will be especially valuable in their transition to future goals beyond school completion.

Research Question 2: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in a) positive affective engagement and b) negative affective engagement? As in the regression finding for the first question, perceptions of competence were found to be predictive of another indicator of academic engagement, positive affective engagement, and accounted for 47% of the variance. Perceptions of relatedness, to a lesser degree, also significantly predicted positive affective engagement and accounted for 22.3% of the variance. The finding that competence and relatedness perceptions predict positive affective engagement conflicts with SDT's assertion that perceptions of autonomy and competence should closely interact with one

another to develop well being (Deci & Ryan, 2000).. Positive affective engagement seems to be similar to a sense of well being and, as seen in this instance, perceptions of competence and relatedness, but not autonomy, predict positive affective engagement. The prediction of positive affective engagement from students' perceptions of relatedness and competence could also be interpreted to suggest that academically at risk students enjoy being in school. For many at risk students, this is a dramatic change. For academically at risk students who experience adverse circumstances in many areas of their lives, positive experiences in an enjoyable school atmosphere may be appreciated. Also importantly, positive affective engagement has been associated with facilitating intrinsic learning and reducing frustration and dislike of school (Pekrun et al., 2002).

The negative association of perceptions of autonomy, competence, and relatedness with negative affective engagement seems to be consistent with Self-Determination Theory (Deci & Ryan, 2000). Students who do not perceive support for these needs would likely experience negative affective engagement in school.

Research Question 3: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in behavioral engagement, as indicated by a) number of disciplinary referrals, b) extracurricular activity participation, and c) number of absences, while enrolled at an alternative school? Although perceptions of autonomy and competence were mildly associated with extracurricular activity participation ($r = .240$ and .202 respectively), perceptions of autonomy, relatedness, and competence were not predictive of any of the behavioral engagement indicators. Autonomy perceptions came close to significantly predicting extracurricular activity participation ($p = .049$), but the other motivational variables were not predictive of any behavioral engagement indicators.

It is interesting that relatedness perceptions were not significantly correlated with extracurricular activities, since these activities may provide opportunities for positive social relations.

It may be that behavioral engagement indicators such as attendance and disciplinary referrals are more closely associated with "compliance" and externally motivated regulation rather than autonomous behavior. Also problematic was measuring extracurricular activity participation. School "B" had many options available for extracurricular participation, while schools "A" and "C" had few options beyond athletics and Key Club. If neither of these options was of interest to students, they likely chose not to participate.

Among the behavioral engagement indicators, extracurricular activity participation has been consistently linked with higher academic achievement and school completion (Ekstrom et al., 1986; Mahoney, 2001; Mahoney & Cairns, 1997; O'Brien & Rollefson, 1995; Wehlage et al., 1989). This highlights the important role extracurricular activity participation has within alternative school programs.

Research question 4: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in the self-regulatory styles of at risk students in an alternative education setting? Only perceptions of autonomy were significantly predictive of an overall autonomous regulatory style. In regard to individual regulatory styles, as indicated in Table 1, the highest mean was identified regulation (M = 3.1) followed by introjected regulation (M = 2.6), with intrinsic and external regulation closely tied at M = 2.5 and M = 2.4 respectively. Identified regulation is associated with an autonomous regulatory style and desirable academic outcomes such as increased intrinsic

motivation (Ryan et al., 1989) and self endorsement of school values (Ryan et al., 1992). Although, introjected regulation is associated with maladaptive responses such as feelings of guilt, anxiety, and contingent self-approval (Levesque et al., 2004; Ryan & Deci, 2000b), it has also been positively associated with increased persistence in school (Otis et al., 2005; Vallerand et al., 1997). It has been hypothesized that introjected regulation may be due in part to the necessity of engaging in uninteresting academic tasks in school (Guay, Ratelle, & Chanal, 2008), particularly when no rationale is provided for their importance.

Although an intrinsic regulatory style has been associated with positive learning experiences such as interest, enjoyment, and excitement during academic tasks, it is also regarded as a less stable experiential state (Reeve, 2001). Thus, with the endorsement of school values accompanying an identified regulatory style, this style may bemore useful for sustaining the long term engagement necessary for school completion.

On the other hand, these divergent regulatory style profiles may be also related to the amount of time students have been in the alternative school. Students enrolled during the current semester would not have been exposed to the alternative school environment as long as those attending for one or more years. In effect, the length of alternative school enrolment may have bearing on how autonomous students' regulatory styles are. Nonetheless, the overall finding indicates that more students have adopted a somewhat autonomous regulatory style.

Research Question 5: Do perceptions of autonomy, relatedness, and competence account for significant amounts of variance in academic achievement, as indicated by the GPA of at risk students, in an alternative education setting? The finding that students'

cumulative grade point average was not predicted by perceptions of autonomy, competence, and relatedness was disappointing. This lack of a predictive relationship could be attributed in part to the more rigorous alpha of .008 applied to the multiple regressions to guard against Type I error. The perception variables accounted for 6.3% of the variance in GPA ($p = 0.015$), with perceptions of competence and relatedness indicating Beta values of .119 and .173 respectively. While the theoretical assumptions indicate that a motivating and supportive environment should enhance academic achievement, perhaps the overall effect is too indirect to immediately impact achievement. It is possible that GPA, as a broad achievement measure, may not be predicted directly by the combination of autonomy, relatedness, and competence perceptions. Nonetheless, GPA is an important outcome for alternative as well as traditional schools, as it is regarded as an indicator of future academic and vocational success.

For further investigation of factors possibly predicting this important outcome, the correlation matrix was examined for other correlates of GPA. Although the identified and intrinsic behavioral regulatory styles, as well as cognitive engagement, would theoretically predict GPA, these were not significantly correlated with GPA. Instead, extracurricular activity participation ($r = .292$), identified regulation, ($r = .226$) and positive affective engagement ($r = .244$) were positively correlated with GPA and disciplinary referrals ($r = -.128$) were negatively related.

Extracurricular activity participation, identified regulation, and positive affective engagement were entered simultaneously into an exploratory multiple regression to assess their predictive relationship with GPA. Interestingly, the model indicated that these variables accounted for significant variance (R^2) 13.9% in GPA; F (3, 168) = 9.007, p =

0.000. Of the three predictors, extracurricular activity had a Beta weight of .252, accounting for 25.2% of the variance in GPA. The results are presented in Table 10.

Table 10

Linear Regression of, Identified Regulation, Extracurricular Activity Participation, and Positive Affective Engagement Predicting GPA

	B	SE	β	*t*	VIF	Sig.
(Constant)	2.302	.353		6.522		.000
Identified Regulation	.092	.087	.080	1.050	1.145	.295
Extracurricular Activity Participation	.397	0.115	.252	3.440	1.050	.001
Positive Affective Engagement	.183	0.077	.184	2.381	1.158	.018

These associations would lead one to consider the types of experiences offered through extracurricular activities and how these activities may impact academic achievement. Given the research literature supporting the connections between extracurricular participation, higher academic achievement, and school completion (Ekstrom et al., 1986; Mahoney, 2001; Mahoney & Cairns, 1997; O'Brien & Rollefson, 1995; Wehlage et al., 1989), further investigation of how extracurricular activity participation may motivate achievement among academically at risk students is warranted.

Research Question 6: Do alternative schools have an overall climate that supports at risk students' autonomy in an alternative education setting? Support for this research question was gathered through formal classroom observations of four classes at each alternative school (Appendix "G") as well as through field notes from informal observations of each school in general. These observations, the accompanying student narratives in Chapter IV, and additional student narratives in the following paragraphs,

provide triangulation of data by strengthening the quantitative findings with additional sources.

For the most part, teacher behaviors exemplifying autonomy support were in the majority as indicated in Table 9. In two of the schools (Schools "A" and "B") instruction was a mix of whole group and small group instruction, while in one school (School "C") students worked primarily independently, often with less interaction with the teacher. Whereas the observation protocol provided a relatively complete array of autonomy supportive and controlling behaviors (Reeve & Jang, 2006) not all behaviors were prompted within each class period observed. Nonetheless, the list did provide a systematic means of assessing autonomy supportive or controlling teacher behaviors within alternative school classrooms.

In addition to the observational sources of data, passages from the student narratives in Chapter IV indicate themes of teaching caring and relatedness: "The teachers don't judge me, and they give me one-on-one time" and "When I did come to [this school] I realized that the teachers are here for the students, not for the money or for themselves."

Perceptions of autonomy support are expressed in a quote from a student in this sample: "I would like to thank [School "C"] for allowing me to work at my own pace, and by doing that I was able to graduate a year early."

Another student's narrative indicates autonomy support as well:

> [School "C"] has [given] me the chance to finish my high school education, and they let me do it at a reasonable pace that even I could work at. When I come to this school, I don't feel pressured and overwhelmed with the work. I actually enjoy it, thanks to the atmosphere and the people who walk these halls everyday. It has

given me something to look forward to every week, a place that I actually want to be at.

Summary of Findings

In sum, the present study has demonstrated that SDT (Ryan & Deci, 2000a) provides a useful framework for understanding how academically at risk students' perceptions of motivational variables predict academic outcomes in alternative school settings. Within the Basic Needs subtheory, perceptions of autonomy, competence, or relatedness predicted some of the academic outcomes investigated, but did not predict them all. Perceptions of competence were strongly predictive of two of the indicators of academic engagement: cognitive engagement and positive affective engagement. Perceptions of relatedness were also predictive of positive affective engagement to a lesser extent. The behavioral indicators of engagement and academic achievement, however, were not predicted by perceptions of the basic needs.

Even so, the predictive relationship of competence to cognitive and positive affective engagement indicates that many of these academically at risk students are academically engaged with the alternative school. As previously discussed, much educational research also supports the association and importance of competence to cognitive engagement as well (Borkowski et al., 1990; Greene & Miller, 1996; McCombs, 1989; Metallidou & Vlachou, 2007; Miller et al., 1996; Zimmerman, 1989; Zimmerman & Martinez-Pons, 1992).

It is interesting that perceptions of relatedness were only predictive of positive affective engagement and were not related to any other academic outcomes. Much prior educational research indicates the saliency of relatedness to academically at risk students

(Byrk et al., 1993; Calabrese & Poe, 1990; De La Ossa, 2005; Garber, 2002; Kim & Taylor, 2008; Lehr & Lange, 2000; Lessard et al., 2008; Natriello, et al., 1990; Wehlage et al., 1998), so it is surprising that perceptions of relatedness did not have a significant role in predicting the academic outcomes. However, the qualitative data gathered from the school observations and student narratives underscore a sense of relatedness among the students.

Organismic Integration subtheory (Ryan & Deci, 2002) provided an informative framework for analyzing the differing levels of motivation among these students, and the degree to which internalization occurs. As expected, perceptions of autonomy were predictive of an overall autonomous regulatory style. It is important to note that, although autonomy is regarded as a critical factor (Ryan & Deci, 2002) in facilitating autonomous self regulation and internalization, the fulfillment of the basic needs of relatedness and competence also assist with this process. Thus, even though relatedness and competence were not directly predictive of autonomous regulation, they are involved in the motivational underpinnings supporting autonomous regulation.

Among the differing regulatory styles found within this group of academically at risk students, the identified regulatory style had the highest mean. Since this regulatory style is associated with adaptive academic outcomes such as an autonomous regulatory style, intrinsic motivation, and the endorsement of school values, it would also point to the presence of an autonomy supporting environment (Reeve, 2002; Ryan et al., 1992). Again, the corroborative qualitative data findings support the presence of autonomy support as well.

Although prior research supports predictive relationships between autonomy, competence, and relatedness perceptions and behavioural engagement, particularly extracurricular activity participation (Barber et al., 2001; Ekstrom et al., 1986; Finn, 1989; Finn & Rock, 1997; Mahoney, 2001; Mahoney & Cairns, 1997; O'Brien & Rollefson, 1995; Wehlage et al., 1989), and achievement (Gottfried, 1985; Gottfried, 1990; Reeve, 2002), the supporting evidence was not found in the present study. These outcomes of behavioural engagement and achievement would be areas for further exploration as discussed in the final section of this chapter.

Limitations

Several limitations will affect the interpretation of these results. Although the selected alternative schools were matched according to the criteria listed for effective alternative schools, the results would be limited to schools which also met these criteria. The student populations were approximately matched regarding proportions of ethnicities represented; however the results may not generalize to alternative schools with different ethnic proportions.

Another limitation may be that the length of time students were attending the alternative school varied in ways that were not accounted for in any of the analyses. Students who had been a member of the alternative school for a longer period may have experienced increased support. This difference could account for differing perceptions among students. A longitudinal research design rather than a cross-sectional one could reduce this effect.

An additional limitation may be the measures of autonomy, relatedness, and competence. The instrument reliabilities were low, and longer versions of these measures

may have increased the accuracy of measurement. Shorter versions were selected in order to keep the surveys concise and limit the reading fatigue of students.

Slight differences in the calculation of cumulative grade point average likely exist. Although the cumulative grade point average at the alternative school was standardized on a 0-4.0 scale, individual teachers may assign different weights to daily assignments or exams.

Implications for Practice and Future Research

By identifying academically at risk students' perceptions of motivational factors within alternative education schools that are associated with academic engagement, self-regulatory styles, and achievement, the results of the study have pragmatic implications for regulating agencies that assess alternative education programs. By collecting data on students' perceptions of the identified contextual factors, alternative education programs could gather important data on the motivational aspects of these programs.

Within this state, program effectiveness is collected and measured via annual summary reports supplied by each alternative school. Currently, the alternative education program evaluation agency annually collects student achievement and attendance data from each public alternative school. Quarterly student assessment data are also collected from alternative education students on the following: intentions to complete school, post graduation plans, helpfulness of counseling sessions, and whether the student would recommend the alternative school program to a friend (OTAC, 2008). By including survey items similar to the ones in this study measuring student perceptions of the alternative school environment, additional data on the motivational aspects of alternative education

programs could be gathered. Such data could be used for continued improvement and development of alternative education programs and faculty development.

Another salient area for future research is the need for more reliable instruments measuring Self Determination Theory's constructs of autonomy, competence, and relatedness. The development of items more precisely measuring these constructs would benefit research relating specifically to the assessment of Self Determination Theory's Basic Needs variables.

Qualitative methods of data collection such as focus groups could contribute to a more complete understanding of how alternative education schools support students' basic needs for autonomy, competence, and relatedness. Input from teachers and counselors, as well as from students, would compliment the quantitative and observational data gathered in this study. Such information may also be useful for alternative school faculty development, as well as for the program evaluators responsible for alternative education teacher support.

In following, a replication of this study using a quasi-experimental design would substantiate the effectiveness of alternative school programs as an intervention for academically at risk students. Such a design might be accomplished by creating a comparison group of students identified as academically at risk, but not receiving intervention. These students could be selected from the alternative school's waiting list of eligible students. These students would eventually be enrolled in the alternative school when placement was available. Thus, the control and intervention groups could be matched on academic risk characteristics and the same data gathered for both groups.

Lastly, given the importance of academic achievement to schooling, focusing on contextual factors that specifically predict GPA would be useful. The exploration of the variables correlating with GPA in this study may provide a basis for such continued research. Also, although the motivational variables were used to predict outcomes in this study, they could also be transposed to become outcome variables in a replication of the study.

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APPENDICES

Appendix "A"

1) How long have you been at this school? _____ (weeks, months, or years)

2) What is your grade point average (GPA) at this school?
_____or
If you have a better idea of the average letter grade, then tell me that:
_____

3) What is your age?_____

4) Please tell me your gender and ethnicity by circling the appropriate response:

Gender	**Ethnicity**
Male	Caucasian/White
Female	African American
	American Indian/Native American
	Asian
	Hispanic/Latino/a
	Multiracial
	Other _____

Appendix "B"

Feelings I have

Please read each of the following items carefully, thinking about how it relates to your life, and then indicate how true it is for you. Use the following 6-point scale to respond by circling the number that applies**:**

1 2 3 4 5 6
not at all very true
true for me for me

1. I feel like I am free to decide for myself how to live my life.	1	2	3	4	5	6
2. I really like the people I interact with at this school.	1	2	3	4	5	6
3. Often, I feel able to do school work well.	1	2	3	4	5	6
4. I feel pressured to do well at school.	1	2	3	4	5	6
5. People I know tell me I am good at what I do.	1	2	3	4	5	6
6. I get along with people I come into contact with at this school	1	2	3	4	5	6
7. I pretty much keep to myself and don't have a lot of social contacts at this school	1	2	3	4	5	6
8. I generally feel free to express my ideas and opinions at this school.	1	2	3	4	5	6
9. I consider the people I regularly interact with at this school to be my friends	1	2	3	4	5	6
10. At this school, I have been able to learn interesting new skills recently.	1	2	3	4	5	6
11. In my daily life at this school I frequently have to do what I am told.	1	2	3	4	5	6
12. People at this school care about me.	1	2	3	4	5	6
13. At this school, I feel a sense of accomplishment from what I do most days.	1	2	3	4	5	6
14. People I interact with on a daily basis at this school tend to take my feelings into consideration.	1	2	3	4	5	6
15. At this school I do not get much of a chance to show how capable I am.	1	2	3	4	5	6
16. There are not many people that I am close to at this school.	1	2	3	4	5	6
17. At this school I feel like I can pretty much be myself in my daily situations.	1	2	3	4	5	6
18. The people I interact with regularly at this school do not seem to like me much.	1	2	3	4	5	6
19. At this school I often do not feel very capable.	1	2	3	4	5	6
20. At this school there is not much opportunity for me to decide for myself how to do things in my daily life.	1	2	3	4	5	6
21. At this school people are generally pretty friendly towards me.	1	2	3	4	5	6

Appendix "C"

Emotions & Feelings I Have at School

Directions:

This scale consists of words that describe different feelings and emotions. Read each item and then circle the appropriate number next to that word. Indicate to what extent you have felt this way at this school during the past week.

Use the following scale to record your answers:
(1) = Very slightly or not at all (2) = A little (3) = Moderately (4) = Quite a bit (5) = Extremely

Most days at this school I feel:	**Very slightly or not at all**	**A little**	**Moderately**	**Quite a bit**	**Extremely**
1. Interested	1	2	3	4	5
2. Distressed	1	2	3	4	5
3. Excited	1	2	3	4	5
4. Upset	1	2	3	4	5
5. Strong	1	2	3	4	5
6. Guilty	1	2	3	4	5
7. Scared	1	2	3	4	5
8. Hostile (Unfriendly)	1	2	3	4	5
9. Enthusiastic	1	2	3	4	5
10. Proud	1	2	3	4	5
11. Irritable (Grouchy)	1	2	3	4	5
12. Alert	1	2	3	4	5
13. Ashamed	1	2	3	4	5
14. Inspired	1	2	3	4	5
15. Nervous	1	2	3	4	5
16. Determined	1	2	3	4	5
17. Attentive	1	2	3	4	5
18. Jittery	1	2	3	4	5
19. Active	1	2	3	4	5
20. Afraid	1	2	3	4	5

Appendix "D

Study Strategies at School

Read each statement and indicate **how much you agree that it is true of you** at this school. Use the 6-point scale below to indicate your response. Circle the number that corresponds to your answer for each question.

	Strongly Disagree					Strongly Agree
1. Before a quiz or exam, I plan out how I will study the material.	1	2	3	4	5	6
2. I organize my study time well.	1	2	3	4	5	6
3. I have a clear idea of what I am trying to accomplish in my classes	1	2	3	4	5	6
4. When I am doing a difficult assignment in school, I keep working on it until I think I have solved it	1	2	3	4	5	6
5. When I work on assignments, I check my understanding of new concepts or rules.	1	2	3	4	5	6
6. When I read something in a book that doesn't make sense, I skip it and hope that the teacher explains it in class.	1	2	3	4	5	6
7. When I run into a difficult assignment, I usually give up and go on to the next problem.	1	2	3	4	5	6
8. When I work on an assignment, I make sure I know what I am asked to do before I begin.	1	2	3	4	5	6
9. When I study I take note of the material I have or have not mastered.	1	2	3	4	5	6
10. It is easy for me to establish goals for learning.	1	2	3	4	5	6

Appendix "E"

Why I Do Things

Read each statement below and indicate how much you agree that it is true of you at this school. Use the 4-point scale below to indicate your response. Circle the numbers: **1** for **Not at all True**, **2** for **Not very True**, **3** for **Sort of True**, and **4** for **Very True** that match your answer for each question.

A. Why do I do my homework	**Not at all True**	**Not very True**	**Sort of True**	**Very True**
1. Because I want the teacher to think I'm a good student.	1	2	3	4
2. Because I'll get in trouble if I don't.	1	2	3	4
3. Because it's fun.	1	2	3	4
4. Because I will feel bad about myself if I don't do it.	1	2	3	4
5. Because I want to understand the subject.	1	2	3	4
6. Because that's what I'm supposed to do.	1	2	3	4
7. Because I enjoy doing my homework.	1	2	3	4
8. Because it's important to me to do my homework.	1	2	3	4
B. Why do I work on my school work?				
9. So that the teacher won't yell at me.	1	2	3	4
10. Because I want the teacher to think I'm a good student.	1	2	3	4
11. Because I want to learn new things.	1	2	3	4
12. Because I'll be ashamed of myself if it didn't get done.	1	2	3	4
13. Because it's fun.	1	2	3	4
14. Because that's the rule.	1	2	3	4
15. Because I enjoy doing my school work.	1	2	3	4
16. Because it's important to me to work on my school work.	1	2	3	4

(Continued)

C. Why do I try to answer hard questions in classes at this school?	Not at all True	Not very True	Sort of True	Very True
17. Because I want the other students to think I'm smart.	1	2	3	4
18. Because I feel ashamed of myself when I don't try.	1	2	3	4
19. Because I enjoy answering hard questions.	1	2	3	4
20. Because that's what I'm supposed to do.	1	2	3	4
21. To find out if I'm right or wrong.	1	2	3	4
22. Because it's fun to answer hard questions.	1	2	3	4
23. Because it's important to me to try to answer hard questions in classes at this school.	1	2	3	4
24. Because I want the teacher to say nice things about me.	1	2	3	4
D. Why do I try to do well in school?				
25. Because that's what I'm supposed to do.	1	2	3	4
26. So my teachers will think I'm a good student	1	2	3	4
27. Because I enjoy doing my school work well.	1	2	3	4
28. Because I will get in trouble if I don't do well.	1	2	3	4
29. Because I'll feel really bad about myself if I don't do well.	1	2	3	4
30. Because it's important to me to try to do well in school.	1	2	3	4
31. Because I will feel really proud of myself if I do well.	1	2	3	4
32. Because I might get a reward if I do well.	1	2	3	4

Appendix "F"

Frequency and Percent on Participant Extracurricular Activities

	Frequency	Percent
Art	8	4.3
Athletics	7	3.8
Chess	3	1.6
Creative Writing	8	4.3
Career Tech org.	8	4.3
Film	2	1.1
Key Club	17	9.1
None	108	58.1
Prevention (Aids/STD)	1	0.5
Spanish	9	4.8
Visioning	2	1.1
Walking	2	1.1
Wilderness	11	5.9

Appendix "G"

Classroom Observations of Autonomy Supporting

and Controlling Teacher Behaviors for Schools "A", "B", and "C"

Appendix "G"

11 Autonomy Support Behaviors			
School A -Teacher A Subject: Algebra II Topic: "Simplifying Polynomials"			Behavior Observed
Behavior	Description	Observation Narrative	
1. Time listening	Percentage of class period the teacher carefully and fully attended to the students speech	75%: Teacher solicited clarification questions, provided 2-3 minutes wait time during guided participation portion of lesson.	Yes
2. Asking what student wants	Frequency of questions asking specifically about what the student wanted or desired	Did not observe. (Teacher-directed guided participation for approximately 40 minutes of class period.)	No
3. Time allowing students to work in own way	Percentage of class time the teacher invited or allowed the student to work independently	25%: The last 15 minutes of the class period students were asked to complete exercises in the textbook independently. The teacher addressed questions individually as students worked on exercises.	Yes
4. Time student talking	Percentage of class time the student talked	30%: On-going discussion between students and teacher during class period with guided participation	Yes
5. Seating arrangements	Whether or not the teacher allows student to choose seat	Seats are not assigned. According to teacher, most students prefer to sit at the same desk each day. Desks are arranged in rows with teacher desk in back of room.	Yes
6. Providing rationales	Explanatory statements as to why a particular course of action might be useful	Teacher solicited student questions during the entire guided participation exercise. Teacher responded to students questions as to "Why can't it be solved using this formula…" or "Why can't we combine these two numbers?" with thorough explanations, apparently to student's satisfaction.	Yes
7. Praise as information-al feedback	Frequency of statements to communicate positive effectance feedback about student mastery or improvement	Teacher responded to student questions in a positive manner, but not necessarily informatively, with statements such as "That's a good question" and "I can see you're really thinking".	No
8. Offering encourage-ment	Frequency of statements to boost or sustain student's engagement.	During the guided participation, teacher frequently stopped and asked, "Is everyone clear on this?" Teacher also asked other students to volunteer explanations of solving parts of the equations.	Yes
9. Offering hints	Frequency of suggestions about how to make progress when the student seemed to be stuck	Teacher monitored students' seat work and offered suggestions when asked questions, while students worked independently on exercises, after class-wide guided participation.	Yes
10. Being responsive to student generated questions	Contingent replies to a student generated comment or question	All student questions were welcomed and addressed during the class period.	Yes
11. Com-municating perspective-taking statements	Empathic statements to acknowledge student's perspective	On two occasions the teacher responded, "I know this looks confusing, but it is like factoring we did last week." "You look like you're shutting down on me…..where did I loose folks?"	Yes
Number of autonomy supporting behaviors observed: 9 of 11			82%

10 Controlling Behaviors			
School A -Teacher A Subject: Algebra II Topic: "Simplifying Polynomials"			
Behavior	Description	Observation Narratives	Behavior Observed
1. Time teacher talking	Percentage of class period the teacher talked	30%: Teacher talking accounted for approximately half of the 40 minutes. Students asked questions and responded to teacher questions the other half of the 40 minutes.	Yes
2. Time holding /monopolizing learning materials	Percentage of class period the teacher physically held or possessed materials	75%: Teacher directed the guided participation for 40 minutes as they solved the presentation of equations to be solved during the guided participation.	Yes
3. Exhibiting solution/answer	Number of solutions the teacher physically displayed before student had opportunity to discover solution for himself or herself.	None. Teacher did not provide any solutions to equations but solicited student answers.	No
4. Uttering solutions or answers	Frequency of statements revealing solution before student had opportunity to discover solution for himself or herself	None observed.	No
5. Uttering directives or commands	Frequency of directives or commands	Frequently throughout the lesson the teacher stated, "Next let's look at the second one"….and so on. Students were directed through the lesson from problem to problem without choice in the arrangement.	Yes
6. Making should/ ought to statements	Frequency of statements that the student should, must, has to do something	None observed.	No
7. Asking controlling questions	Frequency of directives posed as a question and voiced with the intonation of a question.	None observed.	No
8. Deadline statements	Frequency of statements communicating a time shortage	None observed. Teacher did not communicate a shortage of time or create a sense of urgency for hurrying through the lesson.	No
9. Praise as contingent reward	Frequency of verbal approvals of the student or the student's compliance with the teacher's directions	None observed.	No
10. Criticizing the student	Frequency of verbal disapprovals of the student or the student's lack of compliance with the teacher's directions.	None observed.	No
		Number of controlling behaviors observed: 3 of 10	33%

11 Autonomy Support Behaviors			
School A-Teacher B Subject: English Literature II Topic: Harlem Renaissance			Behavior Observed
Behavior	Description	Observation Narrative	
1. Time listening	Percentage of class period the teacher carefully and fully attended to the students speech	50%: Teacher listened to student responses to teacher questions. Teacher also asked for other students to elaborate, agree, or disagree with each student's interpretation of passages.	Yes
2. Asking what student wants	Frequency of questions asking specifically about what the student wanted or desired	None observed. Although teacher directed questions for discussion nearly the entire period, none specifically asked for what students wanted.	No
3. Time allowing students to work in own way	Percentage of class time the teacher invited or allowed the student to work independently	0%: Students voluntarily participated in reading passages or in discussing; however, students in the class were not observed working independently of teacher led discussion.	No
4. Time student talking	Percentage of class time the student talked	50%: Discussion talking time was evenly divided between teacher and students. Students volunteered to read passages without teacher solicitation. Students responded to teacher's invitations to discuss their interpretations.	Yes
5. Seating arrangements	Whether or not the teacher allows student to choose seat	Seats were not assigned. According to teacher, most students prefer to sit a particular desk of their choice. Classroom was arranged with student desks in rows. Teacher's desk and lectern were at the front of classroom.	Yes
6. Providing rationales	Explanatory statements as to why a particular course of action might be useful	None observed.	No
7. Praise as informational feedback	Frequency of statements to communicate positive effectance feedback about student mastery or improvement	Teacher responded positively, but not informatively, to student interpretations of passages with the statement, "That's good…"	No
8. Offering encouragement	Frequency of statements to boost or sustain student's engagement.	Most of teacher-led discussion was devoted to asking for students' ideas on passages. The teacher facilitated further discussion by asking for further elaboration ideas from students.	Yes
9. Offering hints	Frequency of suggestions about how to make progress when the student seemed to be stuck	The teacher interjected questions about literary terminology used in the passages, into the discussion. When students were having difficulty identifying terms, the teacher supplied examples or identified an example within the passage, and then asked students to identify further similar examples. Students were able to do so successfully.	Yes
10. Being responsive to student generated questions	Contingent replies to a student generated comment or question	There were no student generated questions observed other than, "Can we see the video again we saw yesterday"? The teacher simply replied, "No, not today".	No
11. Communicating perspective-taking statements	Empathic statements to acknowledge student's perspective	The teacher began most discussion questions with statements of, "Have you ever been in a situation like this?" Have you ever felt like this?" "Do you identify with this situation?"	Yes
Number of autonomy supporting behaviors observed: 6 of 11			(55%)

10 Controlling Behaviors			
School A-Teacher B Subject: English Literature II Topic: Harlem Renaissance			
Behavior	Description	Observations	Behavior Observed
1. Time teacher talking	Percentage of class period the teacher talked	50%: Teacher talking accounted for approximately half of the class period. Students asked questions and responded to teacher questions the other half of the class period.	Yes
2. Time holding /monopolizing learning materials	Percentage of class period the teacher physically held or possessed materials	0%: Each student had copies of the poetry being discussed.	No
3. Exhibiting solution/answer	Number of solutions the teacher physically displayed before student had opportunity to discover solution for himself or herself.	None observed. .	No
4. Uttering solutions or answers	Frequency of statements revealing solution before student had opportunity to discover solution for himself or herself	None observed.	No
5. Uttering directives commands	Frequency of directives or commands	Teacher directed sequence of passages discussed and asked for students to volunteer reading orally	Yes
6. Making should/ought to statements	Frequency of statements that the student should, must, has to do something	None observed	No
7. Asking controlling questions	Frequency of directives posed as a question and voiced with the intonation of a question.	None observed	No
8. Deadline statements	Frequency of statements communicating a time shortage	None observed. Teacher did not communicate a shortage of time or create a sense of urgency for hurrying through the lesson.	No
9. Praise as contingent reward	Frequency of verbal approvals of the student or the student's compliance with the teacher's directions	None observed	No
10. Criticizing the student	Frequency of verbal disapprovals of the student or the student's lack of compliance with the teacher's directions.	None observed	No
		Number of controlling behaviors observed:	2 of 10 (20%)

11 Autonomy Support Behaviors			
School A -Teacher C Subject: U. S. History Topic: "Territorial Expansion"			Behavior Observed
Behavior	Description	Observation Narrative	
1. Time listening	Percentage of class period the teacher carefully and fully attended to the students speech	75%: Teacher listened and addressed all student questions occurring as students worked independently on daily assignments.	Yes
2. Asking what student wants	Frequency of questions asking specifically about what the student wanted or desired	Teacher-led discussion the first 10 minutes of class was based on student questions about the topic. Some of these discussion points were clarifications of previous day's topic.	Yes
3. Time allowing students to work in own way	Percentage of class time the teacher invited or allowed the student to work independently	75% of class time students worked independently. Students routinely chose from a "menu" of options including maps, audiotapes, prepared worksheets, or note taking, to work on for their daily assignment. Each student had a folder which they turned in to the teacher at the end of the class.	Yes
4. Time student talking	Percentage of class time the student talked	Teacher-led discussion occurred during first 10 minutes of class period. Students and teacher engaged in a discussion regarding issues needing clarification on the history topic for that class.	Yes
5. Seating arrangements	Whether or not the teacher allows student to choose seat	Seats were not assigned. According to teacher, most students prefer to sit a particular desk of their choice. Desks were arranged in rows and the teacher desk was located at the side of the room. The study materials were stacked on a large table in the back.	Yes
6. Providing rationales	Explanatory statements as to why a particular course of action might be useful	Teacher provided rationale regarding the historical ***importance*** of the topic being discussed, but not for the utility of the information.	No
7. Praise as informational feedback	Frequency of statements to communicate positive effectance feedback about student mastery or improvement	Students receive evaluative feedback when they take a unit test each week. Students self-grade their tests and then work with peers to find correct answers for incorrect answers. Any student not achieving 80% mastery could re-take a different version of the exam in the following week	No
8. Offering encouragement	Frequency of statements to boost or sustain student's engagement.	Teacher monitored students' independent work, but did not interrupt or comment unless a student asked a question.	No
9. Offering hints	Frequency of suggestions about how to make progress when the student seemed to be stuck	Teacher generally responded to students' questio with further questions, such as, "Where could fin you find out about that?" and "How is this situati similar to what we covered yesterday?"	Yes
10. Being responsive to student generated questions	Contingent replies to a student generated comment or question	Nearly all teacher responses were given in response to student generated questions.	Yes
11. Communicating perspective-taking statements	Empathic statements to acknowledge student's perspective	None observed.	No
Number of autonomy supporting behaviors observed: 7 of 11			63%

10 Controlling Behaviors			
School A -Teacher C Subject: U. S. History Topic: "Territorial Expansion"			
Behavior	Description	Observations	Behavior Observed
1. Time teacher talking	Percentage of class period the teacher talked	Teacher talked less than 25% of total class time. Either students were engaged in dialogue with teacher, or students worked and talked with one another.	No
2. Time holding /monopolizing learning materials	Percentage of class period the teacher physically held or possessed materials	None observed.	No
3. Exhibiting solution/answer	Number of solutions the teacher physically displayed before student had opportunity to discover solution for himself or herself.	None observed. The teacher asked leading questions to direct their thinking to an answer or a source where they could find a solution to their question.	No
4. Uttering solutions or answers	Frequency of statements revealing solution before student had opportunity to discover solution for himself or herself	None observed	No
5. Uttering directives commands	Frequency of directives or commands	None observed	No
6. Making should/ought to statements	Frequency of statements that the student should, must, has to do something	None observed	No
7. Asking controlling questions	Frequency of directives posed as a question and voiced with the intonation of a question.	None observed	No
8. Deadline statements	Frequency of statements communicating a time shortage	Near the end of the class period, teacher reminded students of limited time available to complete daily assignment and of upcoming testing that week.	Yes
9. Praise as contingent reward	Frequency of verbal approvals of the student or the student's compliance with the teacher's directions	None observed	No
10. Criticizing the student	Frequency of verbal disapprovals of the student or the student's lack of compliance with the teacher's directions.	None observed	No
		Number of controlling behaviors observed:	1 of 10 (10%)

11 Autonomy Support Behaviors			
School A -Teacher D Subject: Teen Leadership Topic: "Developing a Budget"			Behavior Observed
Behavior	Description	Observation Narrative	
1. Time listening	Percentage of class period the teacher carefully and fully attended to the students speech	50%: Teacher listened to student responses to teacher's questions. The other half of class period students worked independently on developing a budget and discussing their budgets	Yes
2. Asking what student wants	Frequency of questions asking specifically about what the student wanted or desired	Teacher did not ask what students wanted to do. Students were given instructions about developing a budge and options to the activity were not discussed.	No
3. Time allowing students to work in own way	Percentage of class time the teacher invited or allowed the student to work independently	0%: Students were provided materials (play money, calculators, and folders). Students were given one of several "profiles" varying on marital status and dependants. Students spent half of the class period working on how they would budget 40K given their situation.	Yes
4. Time student talking	Percentage of class time the student talked	50%: Teacher facilitated discussion. Students volunteered their solutions to their individual case studies and commented on peers' budgeting plans.	Yes
5. Seating arrangements	Whether or not the teacher allows student to choose seat	Seats were not assigned. Long tables were arranged in a "U" shape with teacher in front corner of "U".	Yes
6. Providing rationales	Explanatory statements as to why a particular course of action might be useful	Rationales were provided by teacher regarding importance of being able to realistically predict fixed expenses and prepare for anticipated expenses. Teacher also asked questions such as, "Why would you need to put some money aside?" "Why should you think about insurance?"	Yes
7. Praise as informational feedback	Frequency of statements to communicate positive effectance feedback about student mastery or improvement	Teacher responded positively and informatively to student budgeting rationales by commenting on realistic features of budget. Students also added constructive comments on peers' budgeting plans.	Yes
8. Offering encouragement	Frequency of statements to boost or sustain student's engagement.	The majority of class time was discussion betwe students and teacher. Students demonstrated attention by verbally participating in discussion and the budgeting activity	Yes
9. Offering hints	Frequency of suggestions about how to make progress when the student seemed to be stuck	While students were brainstorming about budgeting plans, teacher offered ideas such as "Are you making plans for future needs such as college for children?" "What about daycare?" "What type of neighborhood could you expect to live in?" to assist with students' budget development.	Yes
10. Being responsive to student generated questions	Contingent replies to a student generated comment or question	Teacher attended to and offered ideas in response to all student questions; however, peers also often offered ideas before teacher responded.	Yes
11. Communicating perspective-taking statements	Empathic statements to acknowledge student's perspective	Several students drew upon their own life experiences regarding financial concerns. Teacher acknowledged and empathized with their experiences.	Yes
Number of autonomy supporting behaviors observed: 9 of 11			(82%)