USING STUDENT RISK FACTORS TO PREDICT STUDENT-SCHOOL CONNECTIVITY

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ABSTRACT

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The purpose of this correlational research study was to examine the degree to which five student risk factors (marijuana use, alcohol use, prescription drug use, household composition, and delinquent behavior) predict student-school connectivity. For the study, a secondary data source was used comprising of 557 secondary school students. The data was collected by a small urban/rural north central Ohio school district in May of 2011. Student results were gathered through the use of the Youth Health and Risk Survey. Three research questions guided the study. The study examined gender, grade level, and household composition differences; substance use compared to national norms, and best predictors of student-school connectedness.

Results showed females had significantly higher use of alcohol. Results also indicated grade level differences included: higher uses of substance in grades 9-12, higher levels of delinquent behavior in grades 6-8, and the lowest levels of student-school connectedness was in grade 9. Household composition differences were observed when comparing two parent households and households without two parents. Results showed students living with someone other than their parents had significantly higher uses of marijuana, alcohol, and prescription drugs; additionally, students living outside their parents’ home had the lowest levels of student-school connectedness.

Results indicated that the studied sample had significantly higher uses of alcohol (28%) and marijuana (12.9%) when compared to national rates of use (alcohol 13.6% and marijuana 7.4%). Lastly, results showed the combination of perceived risk of drug use, delinquent behavior, and alcohol use was significant in predicting student-school connectivity.
Several conclusions were drawn from the study results. First, household composition is a critical factor in the development of student-school connectedness. Students living in household that are absent of parents may be at risk for a numerous anti-social behaviors including substance use, delinquent behaviors, and lower levels of academic success. It is vital from school districts to offer programing to engage families within the school. Second, student grade level can impact the development of student-school connectedness. Students entering grade 9 should be systematically targeted with engagement activities to foster a sense of school connectivity.

Lastly, low level of perceived substance use risk negatively impacts the development of student-school connectivity. Drug awareness programming and drug education can be used as a protection factor toward student substance use. Health related curriculum focused on the negative side effects of alcohol and drug use may decrease student substance use and subsequently increasing student-school connectedness.
This work is dedicated to my parents Mark and Bobbie J. Burke and my grandparents Frank and Mae Burke. Thank you for teaching me the importance of faith and family.
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CHAPTER I. INTRODUCTION

Introduction to the Problem

Student-school connectivity is the pathway to promoting and fostering prosocial norms and positive student outcomes (Oelsner, Lippold, & Greenberg, 2011). Schools are the social systems that create a construct from which adolescents can develop their own systems of social norms, morals, and attitudes (Hemovich, Lac & Crano, 2011). In addition to school, churches, community activities, and extra-curricular activities can also serve as a social system in adolescent development of social norms.

As an experienced teacher, principal, and district level administrator in public school systems, I have witnessed how important the student-school connection is to student academic success and in the development of prosocial student-norms. As a teacher, I encountered students who entered school mentally and emotionally ill-equipped for learning. These students would participate daily in school, not as a means to better their lives, but as a mandate from a state legislature. In my experience, these students had few connections to schooling as an avenue to make sense of their world and the future before them. In the three years I spent in a classroom, I found some of the most important lessons I ever taught centered on students exploring and understanding the world around them and making plans for the future.

As my career transitioned from a teacher to a part of the building level leadership, after working with families early in my administrative career, I believed they were struggling to embrace the true realization of their children’s current circumstances. Parents and guardians had succumbed to their own beliefs that public education was not a valuable and meaningful institution for their children; families’ perceptions about life, education, and the possible future
became their children’s reality. Parents and guardians’ beliefs became their children’s beliefs placing limits based in of doubt and misperceptions.

As my career path navigated me from the building level to a position as a central office administration, I quickly realized that the belief that education and student-school connectedness was valuable was not isolated at any grade level, gender, or background. I found this to be an alarming phenomena with real implications for lack of student success. Additionally, I found that a meaningful educational experience was not considered valuable or, perhaps, possible by all parents, teachers, and community members. My experiences fortified something in my being; I knew the only way to reach students educationally was by engaging them emotionally through a sense of purpose, belonging, and a belief of something better within themselves and in their lives.

The academic goals for every student are the same, high levels of academic success and school completion/graduation. In efforts to help students maintain academic success and high school completion; state legislators, local boards of education, and teaching professionals have established standards and assessments for all students. Unfortunately, a positive and caring school culture is a vital aspect of education that has become absent in the era of standards based instruction and accountability (Constantino, 2003).

A growing body of literature has examined the impact and importance of student-school connectedness in relation to positive student outcomes and adolescent norms. Research has found that an adolescent’s sense of school connectivity can lower the incidents of risk taking behaviors, raise levels of academic motivation, improve student outcomes, and develop positive school and social relationships (Anderman, 2003). Strengthening student-school connectedness can be achieved through a positive school climate which will assist in promoting academic motivation and healthy adolescent student norms (Cohen, Pickeral, & McCloskey, 2009).
This study focused on a specific population, secondary students (grades 6-12); this age can be a very crucial time period in their lives. In a 2011 study, Oelsner, Lippold, and Greenberg examined the impact of the middle grades on student-school connectivity; the research found that school connectedness declines when students enter 6th grade and progressively decreases over the next two years before entering their high school years (Oelsner et al., 2011). Oelsner et al. also discovered that the study participants who engaged in substance use, deviant behaviors, and antisocial peers had lower levels of school connectedness.

**Rationale**

Research widely confirms that student-school connectivity is a protective factor among adolescent substance use. Students who are connected with the school and associate a positive connection with school are less likely to participate in anti-social behaviors and to use illegal substances (Shears, Edwards, & Stanley, 2006). Understanding the importance of student-school connectivity is vital at this time because one of the more concerning problems facing American adolescents is emotional, social, and physical withdrawal from school (Voelkl, 1996). Students who withdraw from school and students who are not emotionally and/or socially-connected with school may exhibit anti-social behaviors. These behaviors may stem from student perceptions and beliefs that schools have failed to meet their needs. The lack of school-connectedness causes student skepticism and doubt in the meaningfulness of the educational process; student detachment from school can manifest in student risk behaviors including decrease in educational engagement, truancy, delinquency, and lower levels of academic motivation (Voelkl, 1996).

Student-school connectedness, for the purpose of this study, is the belief by adolescents that adults in school care about their academic success and them as individuals (Faulkner, Adlf,
During adolescence, connectedness to one’s family and to one’s school has emerged as a key aspect of building protective factors for positive academic outcomes and lowering the rates of risk behaviors (Bond, Butler, Thomas, Carlin, Glover, Bowes, & Patton, 2007). Connectedness to school may impact not only students’ academic success, but also their future vocation and adult health/well-being. Students who are not engaged in school and have poor social relationships with peers and teachers have higher risks of substance abuse, negative social behavior, and depression/anxiety symptoms (Bond et al, 2007; Faulkner et al, 2009; McNeely, Nonnemaker, & Blum, 2002). With an understanding of the importance of connecting students to school, schools must embrace their role in students’ development of appropriate social and learning norms. Students and adolescents learn each and every day through their experiences the interactions between students and adults, family, and peers that will shape adolescents’ norms and behaviors (Cohen et al., 2009).

Adolescent risk behaviors can be influenced by parental involvement and school-level variables/interventions. Adolescent risk behaviors, including alcohol, tobacco, drug use, mental health issues, and delinquency are prevalent issues among secondary students across the United States. The National Youth Risk Behavior Survey (YRBS) (2005), reported 54% of American adolescents have used tobacco, 74% reported using alcohol, 28% showed depressed symptoms, and 38% reported using some type of illicit drug.

Adolescents have unique traits that make them more susceptible to substances; these traits include a greater sensitivity to a drug’s effect on the body, increase in sexual hormones, impulsive behaviors, elevated reactions to tastes and foods, elevated risk taking behavior, novelty seeking, and a greater sensitivity to environmental factors (Carroll, Anker & Perry, 2009). These factors that influence addiction can also explain impulse related behaviors among
adolescents which can increase the likelihood of substance use. Additionally, adolescents may
be less affected by any negative reactions to substance use and less concerned about
consequences because of risk taking behavior (Carroll et al., 2009). If adolescent students are
less affected by the negative effects of substance or the consequences of being caught using
illegal substances, students are more likely to develop anti-social norms. In addition, anti-social
behaviors may lead to the development of other risk factors including delinquent behaviors,
lower academic motivation, and school disconnect.

Further research in student-school connectedness is needed in the areas of student-teacher
relationships and student discipline (Loukas, Suzuki, & Hortin, 2006). Continued research in the
area student perceptions of the school environment would enhance current literature in the area
of educational attainment (Kalil & Ziol-Guest, 2008). The current study will investigate: 1) student delinquency as indicated by aggressive behavior, physically fighting, trouble at school,
or trouble at home; 2) youth experiences such as student-teacher relationships/rapport and
educational motivation; and 3) school connectivity as indicated by students receiving positive
feedback, belief that school is meaningful and important.

**Background**

In 2007, the Great Buckeye School District participated in a local research study to
investigate aspects of adolescent student life: academic self-efficacy, support, stress,
depression/suicide and mental illness, eating/exercise, and alcohol, tobacco, and drug use.
Results of the survey showed students indicated high levels of alcohol, tobacco, and drug use. In
2007 over 56% of the student population answered that they used/will used alcohol and over
30% admitted to using tobacco. Another concerning fact was that over 27% of student
responded that they have used/intend on using marijuana. The results awakened the local
administrations and called the school leadership teams to action. The leadership teams submitted grant application to both state and federal government levels in efforts to improve student life and create a safe and drug free learning environment. Services provided through the grant included counseling, positive rewards and/or reinforcements, and local and national speakers and presenters.

In 2009, the district leadership teams, in conjunction with the county wellness committee, conducted the same survey for the second time. The team wanted to monitor the impact the student intervention programs had on improving student life, notably alcohol, tobacco, and drug use. Unfortunately, the data revealed no improvement in any of the categories. The results left the leadership teams puzzled. Shortly after the second survey, the school leadership team evaluated their programming. Based upon data and lessons learned, the leadership team made significant changes to the prevention/intervention programs and developed a plan for program coordination. In an effort to evaluate these changes and their impact on student behavior, a third survey was administered in spring 2011. This survey sought to gather data on marijuana use, alcohol use, prescription pain reliever use, assumptions of risk, youth experiences, and school connectivity. The current study utilized the data from this 2011 survey. Although the school district administered the survey for program evaluation purposes, this study will use the 2011 data to examine risk taking behaviors in relation to student-school connectedness.

**Purpose of Study**

The purpose of this correlational research study was to examine the degree to which five student risk factors (marijuana use, alcohol use, prescription drug use, household composition, and delinquent behaviors) predict student-school connectivity. In addition, district level rates of risk behaviors were compared to state and national levels. A secondary data source was utilized
from the Great Buckeye School District, a rural school district in central Ohio. The small rural school district collected the data by administering the Student Health and Risk Survey, which was developed by the Great Buckeye School District.

The Student Health and Risk Survey was administered to the entire student population, with 557 students completing the survey. The school population consists of grades sixth through twelfth, with over 800 total students. The school employs over 80 teachers and support staff. The student population is comprised of 80% free or reduced lunch, 30% identified with a disability, and 99% white/Caucasian.

Responses gathered from the survey were analyzed on a number of demographic factors including gender, age, grade level, and household composition. Results from the study were also used to develop recommendations for the training and professional development of school leaders, administrators, and teachers.

**Theoretical Framework**

This study is grounded in Marzano, Walters, and McNulty’s (2005) theory of situational awareness. Situational awareness is defined as the leaders’ awareness of details and the undercurrents regarding the functioning of the school and their use of information to address current and potential problems. Situational awareness involves knowing the negative and positive of daily operations to accurately forecast potential issues and prevent problems from occurring (Marzano et al., 2005). This requires leadership to be proactive and not reactive with issue that can impact the students, staff, and community.

The theory and practice of situational awareness is a vital aspect of school leadership. Ohio schools’ principals and school administrators are directed by the Ohio Department of Education (ODE) to analyze their student population, determine current and/or potential need,
and allocate resources which address the needs in an effective manner. ODE published the
Standards for Ohio Educators and standard number 3 deals with a principal’s allocation of
resources and the management of school operations to ensure a safe and productive learning
environment (State of Ohio, 2007).

Three characteristics are associated with situational awareness which leader must be
aware of and able to perform: accurately predict what could go wrong, be aware of informal
groups and relationships among staff and students, and be aware of issues within the school that
have not yet occurred but that could cause disruption (Marzano et al., 2005). Situational
awareness is not limited to one function of the school. Leaders need to be mindful of student
needs (social skills, academic success, student attendance, student delinquency), staff needs
(scheduling issues, staff conflicts, union concerns), and community needs (communications,
engagement, levy/financials) to create and foster high levels of success.

This study will assist school leadership teams in gaining a deeper understanding of their
student population’s perception of school connectedness. Acquiring a deeper understanding and
awareness of the student body’s risk factors (substance use, delinquency, household composition,
and perceived risk of substance use) and student-school connectedness will provide school
leaders with the necessary data foster and maintain high levels of school connectedness.

**Research Question**

1. Do risk behaviors differ by gender, grade level, or family structure among Great Buckeye
   Secondary School students?

2. Are the risk behaviors, alcohol and marijuana use, of the Great Buckeye Secondary
   School students significantly different from national levels?

**Significance of the Study**

The results of this study may guide, school officials and leadership teams in improving intervention strategies and prevention programming for students. Increasing school connectedness should become a high priority for school leadership (Faulkner et al, 2009). Identifying student perceptions that have a strong relationship to academic success outcomes, positive social norms, and risk taking behaviors can provide school administrators and teachers with data and information necessary to provide prevention and intervention programming to meet student needs.

Research demonstrates that school connectedness diminishes health-risk behaviors and improves school success. Evidence also shows schools can be successful in changing and improve student outcomes by increasing student’s connectedness to school (McNeely, Nonnemaker, & Blum, 2002). District leaders and school personnel can use student data to allocate financial and human resources in efforts to increase student-school connectedness. By using the appropriate data to streamline resources and maximize effects, the schools can create a safe and secure environment that enhances students’ sense of belonging and connection which in turn will improve student success outcomes.

Research encourages teachers, administrators, and superintendents to become transparent with students, parents, and community members about school goals and expectations which will promote higher levels of stakeholder buy-in and support. School communities, students, and parents must work closely to learn and understand school climate/belonging to prioritize goals and set action plans toward meeting student success goals and outcomes (Cohen et al., 2009).
Most school reform fails to meet the needs of students due to the focus of the reform. Most educational reform efforts are focused on school staff development of instructional strategies, student assessment, and curriculum. The aspect of school reform which has been largely ignored is the relationship between students and schools. The student-school relationship is the primary factor for student outcomes (Arum, 2011). Life transitions during adolescence are challenging; schools should facilitate positive student development and encourage prosocial student outcomes through school related activities and positive adult-student relationships (Kosterman et al., 2011). Increasing school connectedness and prosocial behaviors should become a high priority for American school districts (Faulkner et al, 2009; Kosterman et al., 2011).

Youth who experience positive bonding with school are less likely to participate in risk taking behaviors (Shears et al., 2006). Student-school connectedness is a significant intervention to target as a district initiative as a pathway to increasing positive student norms (academic achievement and classroom engagement); however, little research exists on student-school connectedness in the middle grades (Oelsner et al., 2011). This study will benefit research by adding data drawn from an examination of youth experiences and risk factors which may impact school connectedness. Knowing and understanding the risk factors that contribute to physical and emotional problems in adolescents will allow school leaders, classroom teachers, and community members to develop and implement community and school intervention programs (Myers, 2010).

**Definition of Terms**

**Alcohol Use.** The occasional, frequent, or habitual use of alcohol. (beer, wine, hard liquor).
Delinquency. The occasional, frequent, or habitual rule breaking behavior and/or violence.

Household Composition. The person or people who the student lives with on a regular basis (mom and dad, single parent, people other than parents).

Marijuana Use. The occasional, frequent, or habitual use of marijuana (grass, weed, pot, hashish).

Prescription Pain Reliever Use. The occasional, frequent, or habitual use of prescription drugs/pain relievers for purposes which the medications were not intended (Darvocet, Darvon, Tylenol with codeine, Vicodin, Lortab, or Lorcet).

Risk. The associated harm with using marijuana, alcohol, and prescription pain relievers.

Student-school Connectivity. Belief by students that adults in the school care about their learning and about them as individuals.

Delimitations and Limitations

Several boundaries shaped the study and have influenced the results of the study. First, the survey instrument was created and administered by the school district to gather data that was closely aligned to the needs of the school district. Secondly, the sampled population in this study is from one school district. Other county schools were invited to participate in the study; however, no school wished to accept the invitation. Therefore, the scope of this study and the results from data analysis will only reflect one school in the state of Ohio. Lastly, the survey participants consisted of students grades 6-12, ages ranging from 11-18+, to intentionally focus on adolescent age children.

Some limitations are present in this study. The instrument was not evaluated for validity and reliability. Additionally, the survey tool assumed each participant answered each question
honestly. Student honesty is vital to the outcome of this study as the survey asks students to self-report on behaviors that are illegal or seen as “bad”. The survey was administered within the school, during class, which may have been intimidating for students and may have influenced answers.

Two characteristics of this study impact the ability of the results to be generalized to the larger population of other middle, high, or secondary school students. The first limitation of the study relates to the subjects who participate in the study. Participants involved were limited to one school in northern Ohio with limited student diversity. Since no additional school districts participated, the scope of responses is limited to one small community. Gathering information from such a limited population will make comparisons to other school districts more difficult. School leadership teams and administrators should use caution when interpreting the results of this study, given its limited generalizability.

The second limitation was limited by the voluntary nature of the survey responses collected. Student willingness to cooperate and/or the willingness to answer the questions truthfully and honestly could not be controlled, especially since the content of the survey is somewhat sensitive. The study is of a voluntary nature; those who choose to participate may be those who are actively invested in school and may have a positive school experience.

**Organization of Study**

This study is organized as follows: Chapter 1 includes purpose, background of subject, research questions, scope of study. Chapter 2 reviews the current literature of the topic. Chapter 3 is an explanation of the methodology used, data collection, and procedures of the study. Chapter 4 presents the findings, and chapter 5 summarizes major findings and recommendation for further study.
CHAPTER II. LITERATURE REVIEW

A renewed public interest and concern has surrounded students’ connectedness to school following the wave of school violence by adolescents (Ma, 2003). Adolescents experience a variety of factors that influence school connectedness. The concept of school connectedness, as a research topic, began to emerge nationally in the 1990s. Prior to 1990 many researchers and educational leaders contended the business of school is to promote knowledge acquisition and gives little attention to non-academics; recent research and literature suggests the non-academic factors significantly contribute to school success (Libbey, 2004).

School level factors can be linked to positive mental health and academic success; however, what is not as well-known is how schools effectively help students feel connected (Walters, Cross, Runions, 2009). Walters et al. (2009) concluded a key aspect of school connectedness that has yet to be discovered is the how or the process in which schools can enhance the sense of connectedness among adolescents. Specifically, limited research exists on climate and school context, which impacts students’ sense of connectedness (Ma, 2003).

Chapter two will explore research on school connectedness to gain a deeper understanding of the definition of school connectedness, positive aspects of student life, protective factors of connectedness, and relationships with peers and adults. Additionally adolescent risk factors and unhealthy behaviors have been discussed including the use of alcohol and drugs, delinquency, family structure (two parents, single parent, and guardian other than parent), and social structures.

**School Connectedness Defined**

As the study of school connectedness has expanded, so have the terms, concepts, definitions, and measurements (Libbey, 2004). In 2004, Libbey conducted a summary of
literature to identify the various terms, constructs, and instruments. Libbey cited numerous authors and terms associated with school connectedness (See Table 1).

Table 1

*School Connectedness: Terms, Authors, Year* (as cited in Libbey, 2004)

<table>
<thead>
<tr>
<th>Name</th>
<th>Author(s)</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Orientation</td>
<td>Jessor, Van Den Bos, Vanderryn, Costa, Turbin</td>
<td>1995</td>
</tr>
<tr>
<td>School Attachment</td>
<td>Mouton, Hawkins, McPherson, Copley</td>
<td>1996</td>
</tr>
<tr>
<td>School Attachment</td>
<td>Moody, Bearman</td>
<td>2002</td>
</tr>
<tr>
<td>Attachment to School</td>
<td>Gottfredson, Flink, Graham</td>
<td>1994</td>
</tr>
<tr>
<td>School Bond</td>
<td>Jenkins</td>
<td>1997</td>
</tr>
<tr>
<td>School Bonding</td>
<td>Hawkins, Guo, Hill, Battin-Pearson, Abbott</td>
<td>2001</td>
</tr>
<tr>
<td>School Climate</td>
<td>Coker, Borders</td>
<td>2001</td>
</tr>
<tr>
<td>School Connection</td>
<td>Brown, Evans</td>
<td>2002</td>
</tr>
<tr>
<td>School Connectedness</td>
<td>Resnick et al.</td>
<td>1997</td>
</tr>
<tr>
<td>School Context</td>
<td>Eccles, Early, Frasier, Belansky, McCarthy</td>
<td>1997</td>
</tr>
<tr>
<td>School Climate</td>
<td>Simons-Morton, Crump</td>
<td>2002</td>
</tr>
<tr>
<td>School Engagement</td>
<td>Kalil, Ziol-Guest</td>
<td>Manuscript</td>
</tr>
<tr>
<td>School Engagement</td>
<td>Finn</td>
<td>1993</td>
</tr>
<tr>
<td>School Engagement</td>
<td>Manlove</td>
<td>1998</td>
</tr>
<tr>
<td>School Involvement</td>
<td>Caspi, Moffitt, Wright, Silva</td>
<td>1998</td>
</tr>
<tr>
<td>School Membership</td>
<td>Goodenow</td>
<td>1998</td>
</tr>
<tr>
<td>Student Engagement</td>
<td>Multiple Authors</td>
<td>Multiple Years</td>
</tr>
<tr>
<td>Student Identification with School</td>
<td>Voelkl</td>
<td>1996</td>
</tr>
<tr>
<td>Student Satisfaction with School</td>
<td>Samdal, Nutbeam, Wold, Kannas</td>
<td>1998</td>
</tr>
<tr>
<td>Teacher Support</td>
<td>Rosenfeld, Richman, Bowen</td>
<td>2000</td>
</tr>
<tr>
<td>Teacher Support</td>
<td>Ryan, Patrick</td>
<td>2001</td>
</tr>
</tbody>
</table>

For the purposes of her study, Libbey defined school connectedness as a student’s relationship with school (Libbey, 2004); even though the terms differed among leading research, many variables and constructs were very similar. The conclusion drawn from the study identified nine aspects of school connectedness that were consistent among a majority of the research: academic engagement, a sense of belonging, discipline/fairness, extracurricular
activity, likes or enjoys school, student voice, relationships with peers, safety, and teacher/adult support which can be traced across several measure of school connectedness. Libbey’s literature review is an extensive collection of terms and concepts; numerous authors and researchers contributed to the discovery student-school connectedness factors. A research area needing additional attention involved how connectedness is achieved; a generation of research explored characteristics, concepts, and strategies to promote connectedness (Blum, 2005).

The Wingspread Declaration on School Connectedness, based on a review of research and discussions of educational and health experts, formed the foundation for school environments in which all students are engaged and feel like a part of the educational process (Blum, 2005). The Wingspread Declaration defines school connectedness, for the purpose of its discussion and debate, as the belief by students that adults in the school care about their education and care about them as individuals (Wingspread Conference, 2004). The purpose of the Declaration was to encourage schools to create high standards, to challenge students to reach their highest potential, and provide support students need to be successful (Blum, 2005). Three critical requirements must be satisfied to help students become connected: high expectations and rigor intertwined with educational support, positive student/adult relationships, and physical and emotional safety (Wingspread Conference, 2004).

Using the concepts and characteristics from The Wingspread Conference, the Centers for Disease Control and Prevention (CDC) in 2010 developed strategies for increasing protective factors among youth. The CDC used a very similar definition of connectedness with one additional aspect; the addition of “peers” was included to the Wingspread Declaration’s definition: the belief by students that adults and peers in the school care about their learning as well as about them as individuals (CDC, 2010). The CDC concluded that schools can increase
connectedness by focusing on four factors: adult support, belonging to a positive peer group, commitment to education, and school environment. Results indicated that students who feel more connected to school are more likely to have positive health and academic outcomes (CDC, 2010).

**Developing School Connectedness**

**A Model for Developing School Connectedness**

As student-school connectedness has become a priority for schools, scholars, and practitioners have explained ways in which school connectedness can be developed among students. Walters, Cross, and Runions (2009) conducted a review of scholarly articles studying school connectedness in their development of a comprehensive model describing the components of a school ecology which have a positive impact on student outcomes. Utilizing seven scholarly databases, the 2009 study retrieved five-hundred sixty-four articles from the research nine key concepts were identified for study: connectedness, school environment, school belonging, adolescent mental health, youth mental health, school engagement, social ecology, problem behaviors, and adolescent development.

Walters, Cross, and Runions created a model to develop student-school connectedness. The first phase focuses on school ecology or the student’s personal and school environment, including not only the influence of school, but also the relationships in school, within the family, and the community (Walters et al., 2009). The first phase seeks to describe the potential organization (school size, school structure/grade span, class size, departmentalization), function (clear and fair discipline expectations, student autonomy, high academic expectations, parental involvement), environment/buildings (clean maintained buildings, interesting architecture) and
interpersonal connections (relationships among students, staff and student relationships, staff relationships) components that may impact a student’s connectedness to school.

The second phase investigates how the student-school connection is developed while in school. Walters et al. (2009) referenced Abraham Maslow’s model of Hierarchy of Needs from the 1960’s. Maslow concluded that a person’s behavior at any moment will be determined by the strongest need (Maslow, 1970). Maslow’s model detailed five components; each at any given time may determine a person’s actions and behaviors. The model viewed needs in constructs of physiological needs, safety, social, esteem, and self-actualization (Maslow, 1970). Using the Hierarchy of Needs Model, Walters et al. attempt to describe how the social context influences a student’s needs and leads to engagement and academic success. School connectedness can be considered a function of the interactions between and among individuals in their social and ecological environment (Walters et al., 2009).

The next phase focuses on the student’s “fit” within the environment. The model suggests creating a support structures to promote a caring and supportive relationships. This type of environment can be developed by structuring school to allow time to build teacher-student relationships with clear and well-determined boundaries.

Student-school connectedness, regardless of how it is defined, is consistently associated with health, social, and academic outcomes; a greater the connection or sense of belonging is associated with higher academic success, enhanced motivation, participation in school activities/extra-curricular, and school retention (Walters et al., 2009).

Factors that Support School Connectedness

Students are more likely to succeed academically when they feel connected to school (Blum, 2005). Regardless of what it is labeled (school bonding, school climate, teacher support,
or student engagement) the concept of students’ feelings of support and sense of connectedness can impact the academic environment. Even though school connectedness is important in all grades, connectedness is especially crucial during the adolescent years (Blum, 2005). With increasing data and research acknowledging the importance of school connectedness, Blum and his colleagues initiated the Wingspread Conference Center in Wisconsin. Their goal was to gather current research and data from government agencies, education, and public health organizations in reference to school connectedness (Blum, 2005).

The Wingspread Conference identified three school aspects that may improve the sense of school connectedness: 1) high academic standards with increased teacher support, 2) an environment which fosters adult and student relationships are positive and respectful, 3) physically and emotionally safe atmosphere for all students. Schools and educators can increase school connectedness in students when educators avoid separating students into educational tracks (vocational, college), set high academic standards, limit classroom sizes, form multidisciplinary educational teams, assign students to educational advisors, promote mentoring programs, make content relevant, provide service learning and community support programs, implement hands-on learning experiences, incorporate a variety of teaching/instructional methods, extend learning opportunities (extended class periods, school days, or school year), and provide opportunities for students who fall behind to catch up.

In alignment with Blum (2005), the Centers for Disease Control and Prevention (CDC) published *School Connectedness: Strategies for Increasing Protective Factors among Youth.* Students are more likely to be involved in healthy norms and succeed academically when they feel a sense of school connectedness (CDC, 2009). The informational article defines school
connectedness as the belief by students that adults in the school care about their learning as well as about them as individuals.

Four aspects and factors that increase school connectedness outlined by the CDC include adult support, belonging with positive peers, commitment education, and the school environment. Adult support is critical because adolescents’ beliefs about themselves and beliefs about their abilities are shaped by the adults in their lives, inclusive of teachers, parents, and other adults. The positive adult support is encouraged and enhanced by a student’s association with a positive peer group (peer groups which maintain healthy social, personal, and academic norms). Stable peer association provides a protective factor against risk taking behaviors.

Commitment to education is a factor that must be encouraged by both adolescents and adults. Being committed to education is the belief that school is important and then acting out the belief through their actions. The school environment is crucial in the fostering and encouragement of connectivity to school. Connectedness is improved by a healthy and safe school environment because it supports a psychosocial climate (CDC, 2009). School districts can assist in student development of school connectedness. The CDC (2009) suggested six strategies to increase student-school connectedness to school (see Table 2). Students use their adolescent years to establish patterns of behaviors and make life choices that will mold their current and future norms (CDC, 2009). Schools, families, and communities are all important pieces to the development of adolescents in every aspect of their lives.

In addition to the six strategies provided by the CDC The Search Institute (2006) assembled the 40 Developmental Assets for Adolescents (ages 12-18); these developmental assets are considered to be the building blocks of healthy adolescent development (Search Institute, 2006). The assets continue to outline factors that influence adolescent health and
academic norms. The 40 assets were divided into two categories: external (see Table 3) and internal assets (see Table 4). Numerous aspects of the 40 Developmental Assets are directly influenced by school policies, school environment, teacher quality, parental involvement, and community support of the adolescents’ personal and academic life.

Table 2

*Promoting School Connectedness* (as sited in CDC, 2009)

<table>
<thead>
<tr>
<th>Strategies to Increase School Connectedness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Create decision-making processes that facilitate student, family, and community engagement; academic achievement; and staff empowerment.</td>
</tr>
<tr>
<td>2. Provide education and opportunities to enable families to be actively involved in their children’s academic and school life.</td>
</tr>
<tr>
<td>3. Provide students with the academic, emotional, and social skills necessary to be actively engaged in school.</td>
</tr>
<tr>
<td>4. Use effective classroom management and teaching methods to foster a positive learning environment.</td>
</tr>
<tr>
<td>5. Provide professional development and support for teachers and other school staff to enable them to meet the diverse cognitive, emotional, and social needs of children and adolescents.</td>
</tr>
<tr>
<td>6. Create trusting and caring relationships that promote open communication among administrators, teachers, staff, students, families, and communities.</td>
</tr>
</tbody>
</table>

Within the external assets, several categories were presented: support, empowerment, boundaries and expectations, and constructive use of time. Support includes caring, support and love from family, community, and school. The empowerment asset enhances a student’s value system through helping others and being active in his/her community; as well as, having a safe environment in which to grow and develop. The asset of boundaries and expectations helps students by creating a consistent and fair set of rules and regulations in which the adolescent
develops. Lastly, the constructive use of time asset creates a safe and engaging environment for adolescents to learn and grow as young adults.

Internal assets included commitment to learning, positive values, social competencies, and positive identity. Commitment to learning encompasses student motivation, school engagement, and student bonding to school. Positive values enhance student morals, ethics, and values. Social competency includes planning, decision making, culture awareness, and conflict resolution. Finally, positive identity involves a sense of purpose, self-esteem, and an optimistic outlook on one’s personal future.

Schools should dedicate time meeting students’ emotional and psychological needs to enhance adolescent abilities to understand and internalize what caring, honesty, and responsibility mean socially. The Search Institute recommends setting time to instill values to social context. Values include but are not limited to caring, social justice, integrity, honesty, responsibility, and restraint (Search Institute, 2006). The findings and recommendations of the Search Institute reinforce the fact that school connectedness is a deep and vast concept that encompasses the whole child.

**School Structures**

School leaders will find facilitating and securing student connectivity to school among adolescents as a challenging and difficult endeavor; secondary school students spend less time in class with the same peers and teachers (Bergin & Bergin, 2009). School connection and security in school directly impacts students’ socio-emotional well-being. Socio emotional well-being is vital for success in school; the most crucial and foundational element in nurturing student success is school attachment (Bergin & Bergin, 2009). This is very similar to Blum (2006) and the Wingspread Conference which outlined three requirements vital in promoting student-school
Table 3

*External Developmental Assets for Adolescents* (Search Institute, 2006)

<table>
<thead>
<tr>
<th>Support</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Support</td>
<td>Family life provide high levels of love and support</td>
</tr>
<tr>
<td>Positive Family Communication</td>
<td>Young person and her or his parent(s) communicate positively, and young person is willing to seek advice and counsel from parents</td>
</tr>
<tr>
<td>Other Adult Relationships</td>
<td>Young person receives support from three or more nonparent adults</td>
</tr>
<tr>
<td>Caring Neighborhood</td>
<td>Young person experiences caring neighbors</td>
</tr>
<tr>
<td>Caring School Climate</td>
<td>School provides a caring, encouraging environment</td>
</tr>
<tr>
<td>Parent Involved in Schooling</td>
<td>Parent(s) are actively involved in helping young person succeed in school</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Empowerment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Values Youth</td>
<td>Young person perceives that adults in the community value youth</td>
</tr>
<tr>
<td>Youth as Resources</td>
<td>Young people are given useful roles in the community</td>
</tr>
<tr>
<td>Service to Other</td>
<td>Young person serves in the community one hour or more a week</td>
</tr>
<tr>
<td>Safety</td>
<td>Young person feels safe at home, school, and in the neighborhood</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boundaries &amp; Expectations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Boundaries</td>
<td>Family has clear rules and consequences and monitors the young person’s whereabouts</td>
</tr>
<tr>
<td>School Boundaries</td>
<td>School provides clear rules and consequences</td>
</tr>
<tr>
<td>Neighborhood Boundaries</td>
<td>Neighbors take responsibility for monitoring young people’s behavior</td>
</tr>
<tr>
<td>Adult Role Models</td>
<td>Parent(s) and other adults model positive, responsible behavior</td>
</tr>
<tr>
<td>Positive Peer Influence</td>
<td>Young person’s best friends model responsible behavior</td>
</tr>
<tr>
<td>High Expectations</td>
<td>Both parent(s) and teachers encourage the young person to do well</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Constructive Use of Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative Activities</td>
<td>Young person spends three or more hours per week in lessons or practice in music, theater, or other arts</td>
</tr>
<tr>
<td>Youth Programs</td>
<td>Young person spends three or more hours per week in sports, clubs, or organizations at school and/or in the community</td>
</tr>
<tr>
<td>Religious Community</td>
<td>Young person spends one or more hours per week in activities in a religious institution</td>
</tr>
<tr>
<td>Time at Home</td>
<td>Young person is out with friends “with nothing special to do” two or fewer nights per week</td>
</tr>
</tbody>
</table>
Table 4

*Internal Developmental Assets for Adolescents* (Search Institute, 2006)

<table>
<thead>
<tr>
<th>Commitment to Learning</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Motivation</td>
<td>Young person is motivated to do well in school</td>
</tr>
<tr>
<td>School Engagement</td>
<td>Young person is actively engaged in learning</td>
</tr>
<tr>
<td>Homework</td>
<td>Young person reports doing at least one hour of homework every school day</td>
</tr>
<tr>
<td>Bonding to School</td>
<td>Young person cares about her or his school</td>
</tr>
<tr>
<td>Reading for Pleasure</td>
<td>Young person reads for pleasure three or more hours per week</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Positive Values</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Caring</td>
<td>Young person places high value on helping other people</td>
</tr>
<tr>
<td>Equality and Social Justice</td>
<td>Young person places high value on promoting equality and reducing hunger and poverty</td>
</tr>
<tr>
<td>Integrity</td>
<td>Young person acts on convictions and stands up for her or his beliefs</td>
</tr>
<tr>
<td>Honesty</td>
<td>Young person “tells the truth even when it is not easy”</td>
</tr>
<tr>
<td>Responsibility</td>
<td>Young person accepts and takes personal responsibility</td>
</tr>
<tr>
<td>Restraint</td>
<td>Young person believes it is important not to be sexually active or to use alcohol or other drugs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Competencies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning and Decision Making</td>
<td>Young person knows how to plan ahead and make choices</td>
</tr>
<tr>
<td>Interpersonal Competence</td>
<td>Young person has empathy, sensitivity, and friendship skills</td>
</tr>
<tr>
<td>Cultural Competence</td>
<td>Young person has knowledge of and comfort with people of different cultural/racial/ethical backgrounds</td>
</tr>
<tr>
<td>Resistance Skills</td>
<td>Young person can resist negative peer pressure and dangerous situations</td>
</tr>
<tr>
<td>Peaceful Conflict Resolutions</td>
<td>Young person seeks to resolve conflict nonviolently</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Positive Identity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Power</td>
<td>Young person feels he or she has control over “things that happen to me”</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>Young person reports having a high self-esteem</td>
</tr>
<tr>
<td>Sense of Purpose</td>
<td>Young person reports that “my life has a purpose”</td>
</tr>
<tr>
<td>Positive View of Personal Future</td>
<td>Young person is optimistic about her or his personal future</td>
</tr>
</tbody>
</table>
connectedness high academic expectations, positive adult/student relationships, and physical/emotional student safety. Bergin and Bergin (2009) outlined both building and district level policies and practices that can positively affect student connectedness.

Bergin and Bergin believe that student-school connectivity is influenced indirectly through parents but also directly through the relationships and experiences in school and with teachers. School connectedness provides students feelings of safety and security. This allows students to feel protected while they experience the changing world. Connectedness also provides children with models of positive behaviors and norms which students can emulate. When adults and students work together, beliefs, feelings, character traits are shared and learned (Bergin & Bergin, 2009).

The aspect of school that has a direct influence on student development is student-teacher attachment (relationship). An essential strategy for teachers is to connect with students through warm, caring, trusting, and understanding relationships. Teacher-student attachment happens more easily in early grade school years; however, meaningful and positive relationships can be developed in secondary school age children (Bergin & Bergin, 2009).

Teachers’ relationships with students are important components to increasing students’ connectedness to school; building-level initiatives and administrative focus should be placed on increasing and encouraging teacher-student relationships. Bergin and Bergin (2009) outlined recommendations to improve the relationship between teachers and students: 1) increase sensitivity and warmth – reacting positively and timely in a student’s time of distress with caring, warm, and understanding, 2) high academic standards – being prepared for class while maintaining academic expectations for students; providing individualized instruction or intervention to meet student needs, 3) be responsive – provide student choice and ownership of
classroom decisions and instructional media, 4) induction discipline policy – explaining student discipline and providing opportunity for discussion; not coercive discipline which uses a teacher’s power and threats to improve student behaviors, 5) promote character – teaches students how to be kind and compassionate to one another; teach empathy, and 6) providing personal attention – implement interventions that provides individualized attention to students with specific and difficult relationships.

School districts and school leadership can also implement school-wide interventions to improve school-student connectedness. Bergin and Bergin (2009) also outlined six school-wide policies to improve student connectedness: 1) implement school-wide intervention programs – in high risk population schools can implement therapeutic classroom, counseling, student advisors, 2) increase extracurricular opportunities – students feel more connected when involved in extracurricular activities; not limited to sports, 3) keep schools small – students feel more connected in smaller schools; this can be accomplished through schools-within-schools, pods, or academies, 4) provide continuity of place and people – provide extended time for students to be with the same students and teachers; this will provide adequate opportunity for students to develop appropriate relationships, 5) facilitate transitions to new schools – if students must be moved from school to school within the district; leaders should help students get connected to the new teachers and the students, 6) decrease the frequency of leaving the classroom – limit the number times or occurrences students are moved in and out of the classroom; the constant disruptions may negatively impact students’ development of connection to the class.

In a similar study conducted just a few years before the Bergin and Bergin study in 2009 Janis Whitlock viewed student-school connectedness through four developmental variables. The 2006 Whitlock study identified four developmental supports which were significantly associated
with school connectedness: 1) meaningful roles at school, 2) safety, 3) creative engagement, and 4) academic engagement. Whitlock hypothesized that developmental support scores would be positively associated with school connectedness. The study used a combination of survey and focus group data; data was collected within a six month period in the fall of 2001 through the spring of 2002 (Whitlock, 2006).

Results showed all developmental support variables (meaningful roles at school, safety, creative engagement, academic engagement) were all significantly correlated with one another; however, they were most significantly correlated with adolescents’ perception of school connectedness (Whitlock, 2006). Nearly 50% of students disagreed or strongly disagreed when answering if they were academically engaged by the school; conversely a large majority of participants felt the school allowed students the freedom of creative expression, kept students safe, and provided students with meaningful experiences. The Whitlock study may suggest that schools meet the basic or more primal needs of students: these needs include feeling safe, being able to express one’s true self through individual expression, and engaging in meaningful and relevant learning experiences.

Student-school connectedness can be the pathway to improve student success and reduce youth problem behaviors (Oelsner et al., 2011). Little is known about how student-school connectedness changes over the middle grades (Oelsner et al., 2011). In a 2011 study, Oelsner et al., drew from the PROSPER project, a large scale prevention intervention program aimed at reducing substance use among middle school students. Data was collected from 28 participating communities in Iowa and Pennsylvania.

Results of the study showed that student-school connectedness decreased during the middle school years. Oelsner et al. (2011) suggested that middle schools may not be structured
in a favorable way to meet the needs of the changing adolescent students, a very critical period in adolescent development. The study also showed a difference in gender perceptions of school connectedness. Males indicated lower levels of connectedness when entering 6th grade than females. Males also had steeper decreases of connectedness of the course through the middle school years (Oelsner et al., 2011).

The study also found students engaged in anti-social behaviors (substance use, negative-peer relationships, and delinquent behavior) had lower levels of student-school connectedness entering 6th grade. These results are concerning, as school connectedness decreases for all students during the middle school years (Oelsner et al., 2011); students beginning middle school with lower levels of connectedness are more likely to become less engaged in school while maturing through adolescents.

**Household Composition**

Today’s reality of “family” may include living with both-parents, a single parent, stepparents, other relatives, and/or living with people other than relatives; additional family can consist of one child, multiple siblings, and/or step-siblings. Household composition can influence adolescent development by the amount of time, money, discipline, love, and support that can be provided by the parental figures involved.

In a 1995 study, Jenkins examined the relationship between family and school commitment, as well as, family and delinquency. Jenkins surveyed 754 middle school students in an urban-suburban community. An anonymous questionnaire was given to students who had written parental permission. Survey responses included demographic information, family involvement in school, ability grouping, commitment to education, and delinquent behavior. The school enrollment during the study was 911 students, 754 students participated in the study.
The household composition variable was tested at the parents/guardians constructs; single parent or step-parent families have a critical impact on the development of children (Jenkins, 1995). Single parent households can create added stress on children due to lack of economic stability and socio-emotional support. Single parents are believed to have more negative interactions with their children and have less time to appropriately address child misbehaviors (Jenkins, 1995). Step-parent families also create more stressful situations for children; step-parents may not feel an obligation to attend a stepchild’s school functions or attend to a stepchild’s needs, academically or behaviorally. Results did indicate living with a single parent and living with step-parent had a direct strong negative impact on school commitment. Findings also suggested that living with a stepparent, single parent, and less educated mother was related to a child’s school delinquency, via school commitment (Jenkins, 1995).

The study also examined a mother’s education as a predictor of student commitment to school. A mother’s educational attainment can influence students; parents with higher levels of educational completion can provide increased educational resources for children, family socialization, expectations about future educational aspirations for their children, and positive and more frequent interactions with school personnel (Jenkins, 1995). The variable of family involvement examined the level of involvement the family had within school setting. Results showed mother’s education had a strong and positive effect on school commitment (Jenkins, 1995).

Jenkins’ examination of household structure was one way to investigate a child’s home life and how it may impact school success. Support at home and having parents active in one’s education helps adolescents feel safe and secure. School connectedness and academic success can be influenced by a child’s feelings of security. As discussed in Bergin & Bergin (2009),
early in a child’s life feelings of insecurity can impact students’ attention spans and performances on cognitive tasks. Children raised in households where a child’s basic needs are met develop longer attention spans, better reading habits and attachment to education or learning in general (Bergin & Bergin, 2009). The student-parent attachment is related to student-school attachments.

**School Connectedness and Student Outcomes**

**Academic Outcomes**

Students who feel connected to school exhibit positive characteristics or positive student norms; connected student like going to school, are committed to learning, like their teachers, and have positive relationships with peers. Generally in elementary school, students possess feelings of connectedness; however, connectedness begins to decline in the middle grades of school (Monahan et al, 2010). Declines in connectedness can result in disliking teachers, lack of interest in learning, and/or reduced feelings of importance or meaningfulness. Monahan et al. (2010) believe student-school connectedness involves two equal but separate components: 1) attachment – close relationships with teachers and peers at school and 2) commitment – investment in the school, whole or parts, and doing well academically.

Student-school connectedness and commitment are crucial in the social and academic development of adolescents. The adolescent years of a child’s life can be a crucial time; children entering their early teenage years begin self-reflection, identity exploration, self-regulation, and importance of/commitment to education (Goodenow, 1993). A study conducted by Carol Goodenow (1993) examined three aspects of school connectedness: 1) belonging and expectations, 2) factors influencing belonging and support, and 3) grade level and gender differences.
Goodenow’s study utilized *The School Opinion Questionnaire*, with the use of the *Class Belonging and Support Scale (CBSS)*, to gather student self-perceptions from a small New England middle school, utilizing sixth through eighth grade students (N=353). Student ages ranged from 11 to 15 years; student population was over 90% white/European-American descent; minority populations included Korean, East Indian, and Chinese. Data were collected and separated into two areas: 1) student motivation – including expectation of success, interest in school, and importance of school, 2) belonging/support and classroom climate – including belonging in a classroom setting and perceptions of acceptance/alienation, 3) Teacher ratings – including teacher estimate of student grade and effort level.

Results showed students who felt respected and supported by teachers and peers held higher academic expectations. Additionally, a student’s self-perceived expectations were higher when school work was valued and deemed important. The study found no main effects of gender on any self-reported measure. However, class level/grade did show significant differences; declines between belonging/support and motivation were seen in grades sixth to eighth; peer support and teacher support were also areas of decline among sixth and eighth grades students.

Goodenow also found that a student’s sense of connectedness was substantially related to both expectations and values. One aspect of connectedness, teacher support, accounted for over one-third of student assessments of interest, importance of school, and value of academic work. Expectation of success was the primary predictor of grades and effort; however, a sense of belonging and support was significantly associated with grades and effort. Student perceptions of receiving respect, interest in subject, and teacher support was the most influential component of belonging and support (Goodenow, 1993). These results suggest that adolescents may gain
much of their academic motivation and belonging from the support of others within the school environment.

School environment, including adult and peer relationships, can influence a student’s sense of school connectedness and educational commitment. The creation of student-school connectedness derives from a complex network of social and personal relationships. These social and personal relationships support students by fostering feelings or beliefs of being accepted, respected, included, and supported. Adults and peers provide two important support structures each student associates with in school (Goodenow & Grady, 1993).

Goodenow and Grady (1993) believed a student’s sense of connectedness within the two support structures can vary, but that the relationship or membership within the two structures can influence a student’s commitment and connectedness to school. This 1993 study, Goodenow and Grady investigated whether or not the students’ sense of connectedness was significantly associated with school motivation, expectations of success, value of school, and persistence in difficult tasks (Goodenow & Grady, 1993).

In the study, two of six city junior high schools were asked to participate. One school randomly selected a sample of students; as school two selected one grade band (seventh grade) to participate in the study. In total, 207 students participated in the study. Attendance was a concern during the study when only 73% of the student population was present at school during the administration of the survey.

The study measured several aspects of the student experience. School connectedness was assessed with the *Psychological Sense of School Membership Scale* (PSSM); this 18 items scale was developed for early adolescents to find perceptions of being liked, feeling valued, feeling a part of school, and being included. Secondly, friends’ values were assessed through rating
agreement with various statements of friends’ beliefs and behaviors. Third, motivation was assessed by using two scales based on expectations; scales included measurements of students’ expectancy of success, value of school work, importance of school, interest, and intrinsic value. Lastly, effort and persistence data was collected through two items on the survey referencing work when class is difficult (Goodenow & Grady, 1993).

Results showed no significant differences in descriptive statistics between the two schools or among gender and race; therefore, the results were combined for the analysis. All student subgroups scored above midpoint (above 3 on a 5 point scale) in school connectedness, expectancy of success, value of school work, and effort level. However, African-American and male students scored below the midpoint in friends’ academic values. Additionally, Hispanics, whites, and males scored blow the midpoint in school motivation (Goodenow & Grady, 1993).

The main focus of the Goodenow and Grady (1993) study was to investigate the effect of school connectedness and friends’ value on effort and motivation. Results showed connectedness was significantly correlated with friends’ values and with all other measurable outcomes. Friends’ value of school significantly correlated with three of the four measurements; however, each was smaller than the corresponding correlation for feelings of student-school connectedness (Goodenow & Grady, 1993). After controlling for “friends’ value of school”, school connectedness was still significantly associated with expectancy, value of school, motivation, and effort/persistence. Results showed students with a higher sense of student-school connectedness are more likely to be motivated in school and academically engaged in the educational process. Friend’s value of school did not override stronger influence of school belonging.
Student-school connectedness accounted for substantial proportions of the variance in school motivation, expectancy of success, and positive attitude toward school work. A sense of connection was also correlated positively with scores of effort/persistence and measures of positive behavior (Goodenow & Grady, 1993). Simply stated, students find school more enjoyable, interesting, worthwhile, and valuable when they feel “liked” and “valued”. Goodenow and Grady believe student-school connectedness is a vital precursor to the desire for knowledge.

The study suggests that academic motivation within the school context, students’ sense of connectedness and support in school can override the influences of a student’s personal friendship group. Schools, where high levels of support and belonging are fostered, can have a more powerful influence and effect than individual friends or cliques (Goodenow & Grady, 1993). Programming designed to enhance school belonging through positive behavior support and praise may not be wasted efforts, in fact the programming may be a vital aspect of the school environment that increases student-school connectedness and student retention (Goodenow & Grady, 1993).

In a similar study, Ryan, Stiller, and Lynch (1994) examined positive parental and teacher relationships and students’ school functioning. Ryan, Stiller, and Lynch (1994) believe supportive relationships help facilitate an individual’s motivation, self-reliance, and relative achievement. The purpose of the study was to bridge the gap between relationships with significant others and teacher, parents, and friends related to one another in the enterprise of school.

An examination of how general relationships with friends, parents, and teachers relate to one another; these relationships help to define and develop an adolescent’s sense of competence,
control, and positive coping in a school setting (Ryan et al., 1994). The study examined 606 students in a suburb of New York City, New York, by administering a variety of self-perception survey over the course of two school days within the same health class.

Results found that relationships with teachers, parents, and friends have a significant impact on adaptive functioning in a school setting and on one’s self-esteem. Parent and teacher relatedness representations had a meaningful correlation; this suggests there is a relationship among the adult relationships and adolescent’s self-esteem. Representation of friend was not, however, related consistently with adult representations (Ryan et al., 1994).

Relationships and relatedness with parents and teachers was predictive of school adjustment and school motivation. However, friend relatedness and relationships was not related to school adjustment or motivation. Adolescents who reported emulating adults and teachers showed more positive school adjustment, motivation, greater school engagement, and feeling positive about one’s self when compared to emulating friends. Results also showed that a sense of security, emotional support, and academic support from teachers were associated with adolescent’s sense of control, autonomy, and engagement in school (Ryan et al., 1994). This suggests, similar to Goodenow and Grady (1993) that adult relationships can enhance and improve positive social and academic norms. Additionally, adult relationships can have a greater influence on adolescent development than can peers or friends.

**Health and Well-being Outcomes**

Schools (inclusive of teacher, staff, and peers) where positive and respectful climates are promoted can assist students in building attachments to healthy norms of behavior. This positive connectedness/attachment can be fostered and grown in schools where a positive and supportive climate exists and is widely felt by the student population. The school climate/environment,
established and fostered by teachers, can be directly and indirectly related to the overall health of the students such as substance use, delinquent behavior, and educational/academic success (LaRusso et al., 2008). These healthy attachments and/or healthy norms must be modeled and promoted by the teachers, adults, and peers within the school environment. Teachers and school leaders can aid this adolescent development of healthy norms and school belonging by emphasizing respect, setting clear standards of behavior with consistent consequences, and implementing a rule-oriented environment.

A study conducted by LaRusso et al. (2008) tested four hypotheses to extend the understanding of the relationship between a positive school climate and health risks among adolescents. The research predicted that teacher support and regard for students will promote a respectful learning environment. Student sense of belonging is associated with lower levels of depressive symptoms. Respectful climate will be associated with lower levels of depressive symptoms and discourage friendships with drug using friends and promotes healthier school drug use norms.

Through the use of the National Annenberg Survey of Youth (NASY), a national phone survey of adolescents and young adults ages 14-22, LaRusso et al. found that adolescents who experienced having supportive teachers are more likely to develop respectful relationships with adults increasing student-school connectedness. Results also showed a direct relationship between an increased climate of respect and reduced friendship with risk taking peers: a strong perception of healthy school norms reduced individual’s risk taking and substance use (LaRusso et al., 2008).

Climates of respect when combined with strong social belonging were related to fewer experiences of depressive symptoms. The results support the notion that high schools that
promote respectful relationships between students and adults support healthy behavioral norms and improved mental health norms. LaRusso et al. (2008) found that favorable school climates were seen as having clear norms of expected behavior with adults who possess the ability to handle student problems with respect.

Assisting adolescents with handling school and social problems can be a daunting task. Recent increases in the occurrence of school violence have put a heavy emphasis on schools to develop student belonging (Ma, 2003). In a 2003 study, Ma examined three questions concerning school belonging: 1) Is there any variations in students’ sense of belonging, to what extent are students or schools responsible for variations in the sense of belonging, 2) If there are variations among students what specifically causes the variation (related to demographic information), 3) If variations exist among schools, what characteristics are responsible for the variations?

Data were pulled from the New Brunswick School Climate (NBSCS) study conducted in 1996. The population consisted of grades 6 and 8; the data set represented the population of students rather than a sample population (N=13,751). The survey examined the population’s sense of belonging (feeling a part of the school, peers like me), self-esteem (I get along with others, I am physically attractive), general health (feeling low, feeling nervous, feeling sick), academic press (it is important to do well in school, high expectations), disciplinary climate (consistent rules, student get into fights), and parent involvement (parents are involved in homework, parents value school).

At the student level, little differences were noticed in the areas of general health, self-esteem, and sense of belonging (Ma, 2003). School characteristics in the areas of academic press and parent involvement were large where differences in disciplinary climate were small.
Students with lower levels of academic achievement showed a significant sense of belonging as compared to students with higher levels of academic achievement; however, the effect size was particularly small (Ma, 2003). Students with higher levels of self-esteem were positively and statistically significant to sense of belonging when compared to students with low self-esteem.

Students with higher levels of general health reported a greater sense of school belonging. Results showed the cumulative effect of student level demographics were significantly related to student sense of belonging; therefore, student characteristics play a critical role in students developing a positive sense of belonging. Ma (2003) concluded the single most significant predictor of school belonging was students’ sense of self-esteem. This implies that students’ feelings toward themselves are transferred to their feelings about school. Similarly to self-esteem, general student health was a predictor of school belonging which indicates that students with better health norms can and may have more to offer to the school (Ma, 2003). Ma speculates that students with a higher school connection and better general health would have more capital to invest in school activities (i.e. sports, music, and academics).

In the Ma (2003) study, school context variables (school size, school SES) were not statistically significant, but school climate variables (discipline climate, academic press, and parent involvement in school) showed statistically significant effects on the sense of school belonging. These finding suggest that teachers and school staff can have a significant role in the development of student health norms (school belonging, academic efficacy, and effort).

School climate variables are not limited to inside the school walls and/or inside classrooms; these school climate level variables (school belonging, teacher relationship, and peers relationships) can be developed outside the traditional classroom. In a 2002 study by Brown and Evans, research showed students who were involved in extracurricular activities, fine
arts, and other prosocial activities had higher levels of school commitment and attachment. School, in all its capacities, is a primary influence in the development of adolescents (Brown & Evans, 2002). The study set to examine prosocial activities, including in-school activities and fine arts, impact on a student’s self-perception of connectedness.

Data for the Brown and Evans study (2002) were pulled from two school districts in the California-East Bay area. The sample was intended to represent a cross section of the population including students from various socioeconomic and ethnic backgrounds. The sample \( (N=1,739) \) was 5% of the total population of both selected school districts. The sample included Native American (3%), Pacific Islander Americans (4%), Asian Americans (15%), African-Americans (17%), Hispanic-American (18%), European Americans (22%), and mixed ethnicity/other (22%).

The survey tool measured Extracurricular Activities Participation (EAP), ethnicity, school connection, demographics, and substance use. Items for the survey were developed from theory, research, focus groups discussions, and with concerns and suggestions from the district administrative staff. The relationship between EAP and school connection was measured through a series of multiple regression equations. Results indicated a significant relationship between EAP and greater school connectivity. This result held true for the Hispanic, African, and European American subgroups. The robust relationship was maintained when controlling background variables (Brown & Evans, 2002).

Results suggest that school connectivity is not developed solely in the confines of the classroom. The effects of the school can be felt beyond the walls in the forms of sports, band, 4-H, fine arts, and music. Activities held after-school and among students with prosocial norms create a context where adolescents develop healthy student norms. Additionally, times when the
activities are offered can enhance the development of healthy norms; most extracurricular activities are held after-school, which is a critical period of time when a majority of risk behaviors occur (Brown & Evans, 2002).

Understanding that school connectedness and student sense of belonging can be nurtured during and after school, educational leaders, teachers, and staff can take a whole-school approach to build and foster positive student norms. The whole-school approach seeks to capitalize on every moment students are in school to promote healthy student norms. The whole-school approach embodies the health-promoting school (HPS) model; this framework addressed the school as a whole, inclusive of curriculum, teaching, learning, school policies/procedures, social environment, and links/connections to families (Rowe & Stewart, 2009).

Rowe and Stewart (2009) conducted a case study in three Austrian communities between October, 2000 and April, 2002. The research examined: 1) what structural aspects of HSP within the school community influenced school connectedness, 2) what process aspects of HSP influence school connectedness and classroom engagement? The entire school community, including students, staff, parents, care givers, health service agents, and community organizations participated in the two-phase, time sensitive study. Data were collected by using in-depth interviews within the school community. A secondary school, primary school, and a special needs school were selected for the study in order to collect data from different and diverse populations (Rowe & Stewart, 2009).

Findings were drawn from 38 in-depth interviews and 12 focus group discussions across the three selected school communities. Rowe and Stewart (2009) found that students felt a stronger connection to school when the school possessed firm and consistent discipline
policies/procedures, peer support groups were utilized to improve peer social norms, and extracurricular activities were promoted by the school (Rowe & Stewart, 2009).

Promoting student perceptions of school connectedness, along with positive social norms, is vital to the positive development of adolescents. School connectedness is associated with numerous academic, emotional, and behavioral outcomes. Students with a greater sense of school connectivity are less engaged in delinquent behavior and less likely to use illegal substances; school connectivity is also positively connected to healthy emotional and mental health (Monahan, Oesterle, & Hawkins, 2010).

**Student Risk Behaviors**

Risk behaviors can manifest in numerous ways and through a variety of unhealthy norms (reduced school connectedness, poor relationships with peers and adults, and mental health issues), delinquent behaviors (fighting, bullying, school non-attendance, drug involvement, and breaking school rules) and substance use (alcohol, marijuana, tobacco, prescription medications, and other illegal drugs) (Bond et al., 2007; Collins et al., 2008; Richman, Rosenfeld, & Bowen, 1998). School connectivity, student relationships, and family structure can all influence student risk taking behaviors and development of prosocial norms (Jenkins, 1995; Jenkins, 1997).

**Delinquent Behavior**

Academic success and positive educational outcomes can be influenced by parents, teachers, and peers. During a child’s development, it may not be who provides the support but what types of support are offered. An aspect of school connectedness is students’ feelings of support and sense of belonging which does impact academic success or failure. Social support is often less present in students who are considered at-risk and students at risk of school failure. School failure consequences do not stop at schoolhouse steps; society will feel the effects of
individuals who fail to obtain a high school education includes a waste of human capital, loss of national income, loss of tax revenue, higher rates of sexually transmitted diseases, increased demand on social services, and increased crime (Richman et al., 1998).

Richman et al. (1998) examined social supports of students at risk of school failure and types of support that provide support to academic outcomes. Eight support types were utilized within the study and helped to define and explain interactions among individuals or within groups (see Table 5).

Table 5

*Eight Social Supports* (Richman, Rosenfeld, & Bowen, 1998)

<table>
<thead>
<tr>
<th>Support Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening Support</td>
<td>The perception that others are listening with giving advice or being judgmental</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>The perception that others are providing comfort and caring; others indicate that are on recipient’s side</td>
</tr>
<tr>
<td>Emotional Challenge</td>
<td>The perception that others are challenging the support recipient to evaluate one’s attitudes, feelings, or values</td>
</tr>
<tr>
<td>Reality Confirmation Support</td>
<td>The perception that others, who are similar or who see things the same way, supports the recipient’s perspective of the world</td>
</tr>
<tr>
<td>Task Appreciation Support</td>
<td>The perception that others are acknowledging the support recipient’s efforts and is expressing appreciation</td>
</tr>
<tr>
<td>Task Challenge Support</td>
<td>The perception that others are challenging the support recipient’s way of thinking in order to stretch, motivate, and lead the recipient to an great level or creativity, excitement, or involvement</td>
</tr>
<tr>
<td>Tangible Assistance Support</td>
<td>The perception that others are providing the support recipient with financial assistance, products, or gifts</td>
</tr>
<tr>
<td>Personal Assistance Support</td>
<td>The perception that others are providing support recipient with services or help, i.e. running errands</td>
</tr>
</tbody>
</table>

The supports are essential during adolescents’ transition from elementary school to secondary school; students may find the changes in the social structures and the learning environment in secondary school over-whelming and confusing. Students who fail to adjust to the secondary school environment will not receive the needed social and academic skills required
to be productive in higher education or in the job market (Richman et al., 1998). Richman et al. (1998) surveyed 808 students in 17 middle schools throughout North Carolina and Florida to assess whether students received the eight types of support and who were the providers of the support. The eight social supports were also examined in relation to school outcomes.

Study participants who received listening support achieved higher academic scores and had a higher school self-efficacy; no school outcome differences were found among high school-age students. However, both middle school and high school students who received technical appreciation support felt a greater sense of school connectedness; high school students also reported more time spent on school work during the school week. Technical challenge support yielded better school attendance among middle school students; high school students had lower levels of delinquent behaviors as compared to students who did not receive the same support (Richman et al., 1998).

Participants who reported emotional support reported being more satisfied with the school experience; high school students receiving the same support had high levels of school self-efficacy and better school attendance (Richman et al., 1998). Participants who received personal assistance support were engaged in positive student activities and prosocial behaviors; high school students receiving the support reported spending more time studying on school nights. This may lead one to believe that motivation and student engagement are not connected to tangible reward and payment.

Richman et al. (1998) concluded parents or caregivers are the major sources of support when helping students obtain academic success in school. Results showed parents and caregivers contributed the majority of support in six of the eight supports types: technical appreciation, technical challenge, emotional, emotional challenge, reality confirmation, and
personal assistance. However teachers can contribute support in three areas of support: emotional support, personal assistance, and technical appreciation support. School failure and student-school connectedness can be altered, improved, or lost during adolescent school years.

Parents, teacher, and caregivers must understand the influence caring and support can have on a child’s development. Utilizing Hirschi’s social bonding theory, Jenkins (1997) conducted a study examining the relationship between school commitment and school delinquency. Using data from middle school students, Jenkins’ study systematically examined school bond (personal background, family/school involvement, ability groups) and the effects of the school social bond and school delinquency. Jenkins researched student school connectedness through four components: 1) unsatisfying social interaction – caring about others and their feelings, 2) commitment – valuing educational goals, 3) involvement – participating in school-related activities, and 4) belief – accepting school rules as fair and consistent (Jenkins, 1997).

Jenkins’ (1997) research investigated schools’, as facilitators of socialization, influence as a prevention of delinquent behavior by strengthening student-school connectedness. A theoretical model was created to examine the effect of student level factors of school-related delinquency. The saturated path model flows left to right; each variable is regressed on variables in columns to the left of it.

To gain a full understanding of the relationship between school bonding and school delinquency, Jenkins examined the combined effects of the four elements of school bonding on delinquency. The unique aspect of the study considered the impact of certain predictors of school bonding and consequences of the bond on delinquent behavior in one model (Jenkins, 1997). The Jenkins study utilized a sample consisting of 754 students ranging in ages of 11-15 years from grades seven and eight. Data were collected through the administration of an
anonymous survey asking students to respond with personal background information and self-perceptions of individual experiences. All school social bond components were considered simultaneously to represent the total effect on school delinquency.

Results showed educational commitment, belief in fairness, and consistent rule reinforcement had a strong inverse association with school crime. Unexpectedly, the attachment and involvement components had no significant effect on school crime (Jenkins, 1997). Mother’s education, grade level, and ability grouping only had an influence on school crime indirectly though school commitment. Results also showed students with mothers who obtained higher levels of education, eighth grade students, and higher ability groupings were more committed to school, which made them less likely to commit crimes at school. Conversely, students who were non-white, male, had step-parents, and whose parents were not involved to schooling, and had less commitment in school, had less belief in fairness/consistency of school rules. School commitment remained the bond component with the greatest standardized effect on school crime (Jenkins, 1997).

All bond variables, except for involvement, had an inverse association with misconduct; grade level, ability grouping, and mother’s education affected misconduct indirectly through school commitment (Jenkins, 1997). Students in a higher math ability group were more committed to school and had less incidents of non-attendance. Results indicated the step-parent component affected school misconduct indirectly through both commitment and belief. Step-children were also less committed to school and reported less belief in fairness and consistency in school rules. White students, girls, and students with involved parents were more committed to school, more attached to school, and had a greater belief in fairness and consistency (Jenkins, 1997).
Results showed commitment, attachment, and beliefs were inversely related to school non-attendance; however, school involvement did not significantly influence non-attendance after other social bond components were controlled. Students in the eighth grade and who had mothers with a higher education were more committed to school; this may explain the lower incidents of non-attendance (Jenkins, 1997).

Although all bond components impacted school delinquency, some bond components had more of an impact than others; school involvement was the weakest predictor of delinquent behavior. Commitment explained a higher proportion of the variance for all forms of delinquent school behaviors. Along with commitment, belief in school was the most important predictor of school crime. Results revealed higher math ability and the mother’s education obtainment were the strongest predictors of school commitment (Jenkins, 1997). The Jenkins study (1997) confirms the importance of adolescents bonding or feeling connected with their school as a vital strategy in reducing the number and frequency of delinquent school behaviors.

**Substance Use**

Recent reports show that substance use among adolescents in rural communities is now greater than in urban areas (Shears et al., 2006). Evidence does support schools being a protective factor against adolescent substance use (Shears et al., 2006). In a 2006 study, Shears et al. collected data through the use of Community Drug and Alcohol Survey. Surveys were distributed in all regions of the United States with results showing that students in more rural areas were more likely to get drunk or use alcohol products. Students who lived in more urban areas had higher levels of marijuana use as compared to rural areas (Shears et al., 2006). Having higher levels of school connectedness reduced students’ chances of lifetime use of substances. Females were less likely to use alcohol and marijuana. Lastly, family involvement and parental
engagement were significant in lowering the chances of lifetime use among adolescents (Shears et al., 2006).

Lack of student-school connectedness is linked to substance use among adolescents (Bond et al., 2007). In a 2008 study, Collins et al. examined 8th grade students in Kentucky. The survey sample was comprised of 22,986 students in 159 schools between the years 1999-2002. Risk and protective factors were measured using an instrument from the Six-State Needs Assessment Study. The risk factors examined included favorable attitude toward drug use, peer drug use, family conflict, and parental attitude favorable toward drug use, academic failure, and availability of drugs. In addition to risk factors, three protective factors examined included perceived risk of drug use, family attachment, and commitment to school.

Of the risk factors studied, three showed higher predictability of drug use: peer drug use, family conflict, and availability to drugs. Additionally, lower levels of academic achievement and higher levels of school-related problems increased the likelihood of drug use. As expected, students were nearly half as likely to use drugs when strong family and peer support existed. Knowledge of risk factors will allow leaders to better predict drug use among adolescents. Additionally, knowing which protective factors are shown to decrease drug use can be the focus of prevention programs (Collins et al., 2008).

Adolescent drug prevention is important in student development; there is evidence that drug abuse occurs quicker when the substance abuse begins before adulthood (Chen et al., 2009). The Chen et al. (2009) research was conducted to examine new evidence on adolescent-onset users who have excess risk for drug dependence syndromes. Data were gathered from public use datasets released after the 2000-2002 United States National Surveys on Drug Use and Health.
Each of the 5,547 participants was asked to complete a standardized questionnaire to identify substance use and year of onset users.

Results indicated that students that were adolescent-onset marijuana users were more likely to experience clinical dependency features as compared to adult-onset users. Similar results existed when comparing adolescent and adult-onset of inhalant drug use. Results showed an excess risk of clinical dependency and associated problems among early onset substance users (Chen et al., 2009).

Substance use may differ among age, race, and gender. In a survey of more than 2,500 high school students, Myers (2010) examined risk behaviors based on race, gender, and age. An instrument of 57 questions in the areas of tobacco use, alcohol uses, illegal drug use, and peer relations were used. The study found that Caucasians were more likely to use tobacco and have friends who used when compared to African-American students.

The study also found that males were more likely than females to use tobacco products and have friends who use tobacco; additionally, males were found to be more likely to use illegal drugs and to have friends who use illegal drugs. Results of age differences found that older high school students (15 or older) were more likely to use tobacco, alcohol, and illegal drugs as compared to students 14 years and younger (Myers, 2010).

The U.S. Department of Health and Human Services’ Substance Abuse and Mental Health Services Administration published the results of the 2010 National Survey on Drug Use and Health (NSDUH) findings (2011). The annual survey is administered in all fifty states and the District of Columbia with its specific purpose to gather data on the illicit use of drugs, tobacco, and alcohol among the civilian, non-institutionalized United States’ population. The
sample size selected in 2010 was 85,668 people; out of the selected sample, 68,487 people completed the survey.

The current rate of illicit drug use among adolescents, ages 12-17, is 10.1%, slightly higher than in the 10% reported in 2009. From 2002 through 2008, illicit drug use declined from 11.6% to 9.3% respectively. Of the over ten percent reportedly using illicit drugs, 7.4% were currently using marijuana and 3% using psychotherapeutic drugs. Results were broken down in further detail: among ages 12-13, 2% reported using psychotherapeutic drugs and 0.9% using marijuana. Respondents ages 14-15, 6.5% were currently using marijuana and 3% using psychotherapeutic drugs; ages 16-17, 14.3% using marijuana and 3.9% using psychotherapeutic drugs. Illicit drug use, all categories, declined from 2002 through 2008; trends in all illicit drug use began to increase in 2009 and 2010 (Substance Abuse and Mental Health Services Administration, 2012).

In 2010 illicit drug use was similar among adolescent males and females (10.4% for males and 9.8% for females); males were more likely to use marijuana than females (8.3% compared to 6.4%); however, females generally were more likely to use psychotherapeutic drugs (3.7% females to 2.3% males) and other pain relievers (3% females to 2% males) (Substance Abuse and Mental Health Services Administration, 2012).

The NSDUH also examined adolescent alcohol use. Results showed that alcohol use of adolescents was 13.6% in 2010. Use of alcohol among survey participants ranged by age: ages 12-13, 3.1%, ages 14-15, 12.4%, and ages 16-17, 24.6. Additionally, rates of binge drinking were 1% for ages 12-13, 6.7% for ages 14-15, and 15.3% for ages 16-17. Binge drinking results among the age groups 12-13 and 16-17 year olds declined in 2010 (12-13, 1.6% to 1%; 16-17,
Reported alcohol use between males (13.7%) and females (13.5) were very similar. The NSDUH reported a different age range when looking at alcohol. Some results were presented in smaller more specific age ranges; however, other results were presented in the age range of 12-20 to account for “underage drinking”. The rates of current, binge, and heavy drinking among underage drinkers declined from 2002 (28.8%) to 2010 (26.3%). Female participants reported less underage drinking as compared to males in current drinking (24.1% vs. 28.3%), binge drinking (14% vs. 19.8%) and heavy drinking (3.5% vs. 6.7%).

In 2010, 81.6% of current underage consumers of alcohol were with two or more people while drinking, 13.1% were with one other person while drinking, and 5.2% were alone (Substance Abuse and Mental Health Services Administration, 2012). Over 50% of underage drinkers were in someone else’s home while drinking and only thirty percent were at their own home. Thirty percent of underage drinkers reported buying their own alcohol, 21% reported giving money to another person, and only 8% reported buying the alcohol themselves. Additionally, of underage drinkers, females were more likely to drink alcohol in a restaurant, bar, or club.

The percentages of youth using alcohol and marijuana in the past month were lower among those who perceived great risk in using the substance compared to those who did not perceive great risk. Respondents ages 12-17 who perceived great risk in binge drinking and marijuana use had lower percentages of use (binge drinking 4.8% and marijuana use 1.3%) compared to respondents who did not perceive great risk (binge drinking 10% and marijuana use 10.2%) (Substance Abuse and Mental Health Services Administration, 2012).
The NSDUH reported the percentage of adolescents who perceived great risk in smoking marijuana once a month in 2007 (34.5%) decreased in 2010 (30.1%); additionally, respondents who perceived great risk in using marijuana once or twice a week decreased from 2007-2010 (54.7% to 47.5%). Consistent with the decrease in perceived risk is the increase in use of marijuana over the same time period (6.7% vs. 7.4%).

Reviewing perceived risk from 2002 through 2010 shows decreases in perceived risk. In 2002 the perceived risk of using marijuana once a month was (51.5%) and using marijuana once or twice a week (32.4%); as compared to results in 2010, perceived risk of using marijuana once a month (47.5%) and using marijuana once or twice a week (30.1%).

**Summary**

The literature review shows that student-school connectedness has been a recent area of research beginning in 1995 with Jessor et al. research on positive orientation. In 2004, Libbey conducted a review of the subject of student-school connectedness. Her research shows the vast range of variation on the concept of school connectedness between the years of 1995 and 2001. The research concluded by identifying nine aspects of school connectedness that were consistent among a majority of the research: academic engagement, a sense of belonging, discipline/fairness, extracurricular activity, student voice, relationships with peers, safety, and teacher/adult support which can be traced across several measure of school connectedness (Libbey, 2004).

Many school, district, and family/community level factors contribute to the development of students-school connectedness. The Wingspread Conference identified three building level factors to improve student connectedness: high expectations and rigor intertwined with educational support, positive student/adult relationships, and physical and emotional safety
Similarly, research conducted by the CDC showed that focusing on adult support, creating belonging to a positive peer group, enhancing commitment to education, and establishing a positive school environment will promote student-school connectedness, consequently leading students to develop prosocial norms, positive health, and academic success (CDC, 2010).

The adolescent years of a child are a crucial time in a child’s life; children entering their early teenage years begin self-reflection, identity exploration, self-regulation, and importance of/commitment to education; all of these aspects of life may not come naturally for adolescents (Goodenow, 1993). Adults and peers provide two important support structures which guide student through this process (Goodenow & Grady, 1993). Adolescent students are greatly influenced by the school environment; a sense of security, emotional support, and academic support from teachers were associated with adolescent’s sense of control, autonomy, and engagement in school (Ryan et al., 1994). This suggests, similar to Goodenow and Grady (1993) that the school environment does influence the development of positive social and academic norms.

Student-school connectedness is often less present in students who are at risk of academic failure and who present delinquent behavior (Jenkins, 1997; Richman et al., 1998). Support is essential during adolescents’ transition into high/secondary school; students may find the changes in the social structures and learning environment in the upper grade levels overwhelming and confusing. Students who fail to adjust to the secondary school environment will not receive the needed social and academic skills required for success (Richman et al. 1998). Lack of student-school connectedness does not only present in academic failure; lack of
students-school connectedness is also been linked to substance use among adolescents (Bond et al, 2007).

Building and district level factors are linked to increasing student-school connectedness; in turn promoting positive mental health and academic success (Walters et al., 2009). The present study will provide data that will contribute and fill a gap in the literature on student-school connectedness in the middle grades (6-8) and student-school connectedness among students transitioning from middle to high school.
CHAPTER III. METHODOLOGY

This chapter presents a summary of the methodology designed and applied to study which student health risk behaviors predict student connectivity. This chapter describes the research design, participates, instrument, collection procedures, data analysis, assumptions and limitations of this study.

Research Design

The purpose of this correlational research study was to examine the degree to which student health risk behaviors (marijuana use, alcohol use, prescription drugs, family structure, and delinquency) predict student connectivity among 6th through 12th grade student. This study also compared district rates in alcohol and marijuana use to national rates. Data were collected with the Student Health and Risk Survey administered by the Great Buckeye School district. For this study, the data was a secondary data source. Correlational research was appropriate since the researcher examined the correlations among the variables and used regression to examine the degree to which some risk behaviors predict student connectivity. Causal inferences were not possible.

Participants

The participants in this study consisted of students from The Great Buckeye Secondary School enrolled during May 2011. Student ages ranged from eleven years of age to adult-age students, eighteen years of age and older. For the purpose of the survey the school leadership felt that separating between ages 18 and 22 would not be necessary, due to the fact most high school seniors would be 18 years old or younger. The secondary school has a total population of 750 students with approximately 92% white, 65% in poverty, and 20% identified with a physical and/or a learning disability (CUPP Report, 2013). Sixty students attended the local career and
technical center and did not participate in the study due to a conflict in scheduling. In addition, students and/or parents had the opportunity to refuse participation. As a result, only 557 students completed the instrument. The study used this existing data generated by the school district.

**Instrumentation**

This study utilized a secondary data source; the original data was collected by the Great Buckeye School district through the administering of the Youth Health and Risk Survey (YHRS). The YHRS instrument was developed by the Great Buckeye School District to evaluate student behaviors and perceptions regarding: (1) marijuana use; (2) alcohol use; (3) prescription drugs; (4) household composition; (5) school connectivity and (6) delinquency. The school district hoped the survey would provide school leadership and student support advisors with information concerning student safety, wellness, and delinquency in relationship to student sense of school connectedness.

The YHRS consisted of 36 items, and was divided into five sections: marijuana (items 1-6), alcohol use (items 7-13), risk (items 14-20), prescription pain relievers (items 21-25), and youth experience (items 26-36). The section on risk assesses student understanding and belief that alcohol use, marijuana use, and pain reliever use is unhealthy and possesses a distinct physical health risk. The section on youth experience elicits responses regarding one’s school experience (school connectivity) and the frequency of delinquent behaviors. In addition to the self-assessment, students were asked to complete a general demographic questionnaire which provided information as it relates to gender, grade level, age, and family structure.

The YHRS was created by the administrative leadership at the Great Buckeye School District in conjunction with the local wellness committee; the wellness committee was comprised of a school administration, county social workers, adolescent-age counselors, student/family
advocates, and doctors of medicine. The wellness committee offered suggestions, assistance, and volunteered services to the Great Buckeye School District.

In developing the instrument, the survey committee utilized the previous risk surveys administered in the district as well as reviewed state and national risk surveys (Substance Abuse and Mental Health Services Administration, 2012). The survey and scales were modified to fit the needs of the secondary school. A variety of response scales were utilized. All responses were quantified to generate numerical scores for items and subscales, such that the higher the score, the greater the use or risk. The following sections describe each survey subscale.

**Section 1: Marijuana Use.**

Items 1-6 collected information related to marijuana use. Items elicited responses regarding use, age of first use, and frequency of use/getting stoned. Since a variety of time frames were posed, several response scales were utilized. Table 6 presents the items and response options for the marijuana use subscale.

<table>
<thead>
<tr>
<th>Table 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Survey Items and Response Scale for Marijuana</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Text</th>
<th>Response Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Have you ever, even once, used marijuana or hashish?</td>
<td>0=No; 1=Yes</td>
</tr>
<tr>
<td>2</td>
<td>If you have ever smoked marijuana (grass, pot), how old were you when you first began?</td>
<td>0=don’t use; 1=over 18 years; 2=17-18 years; 3=15-16 years; 4=13-14 years; 5=11-12 years; 6=9-10 years; 7=under 9 year</td>
</tr>
<tr>
<td>3</td>
<td>How long has it been since you last smoked marijuana or hashish?</td>
<td>0=never; 1=more than 12 months; 2=more than 30 days less than one year; 3=within 30 days</td>
</tr>
<tr>
<td>4</td>
<td>During the past 30 days, how often did you smoke marijuana (grass, pot)?</td>
<td>0=no use; 1=1-5; 2=6-9; 3=10-19; 4=20-30</td>
</tr>
<tr>
<td>5</td>
<td>In the past 30 days, how often do you get stoned?</td>
<td>0=no use; 1=less than once a month; 2=once or twice a month; 3=about once a week; 4=several times a week</td>
</tr>
<tr>
<td>6</td>
<td>In your life, how often have you smoked marijuana (grass, pot)?</td>
<td>0=no use; 1=occasionally; 2=monthly; 3=weekly; 4=daily</td>
</tr>
</tbody>
</table>
Section 2: Alcohol Use.

Items 7-13 collected information related to alcohol use. Items elicit responses regarding use, age of first use, and frequency of use/getting drunk. Again, multiple response scales were used to accommodate the variety in time frames. Table 7 presents the items and response options for the alcohol use subscale.

Table 7

Survey Items and Response Scale for Alcohol

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Text</th>
<th>Response Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Have you ever, even once, had a drink of any type of alcoholic beverage? Please do not include times when you only had a sip or two from a drink.</td>
<td>0=No; 1=Yes</td>
</tr>
<tr>
<td>8</td>
<td>If you have ever used alcohol (beer, wine, hard liquor), how old were you when you first began?</td>
<td>0=don’t use; 1=over 18 years; 2=17-18 years; 3=15-16 years; 4=13-14 years; 5=11-12 years; 6=9-10 years; 7=under 9 years</td>
</tr>
<tr>
<td>9</td>
<td>How long has it been since you last drank an alcoholic beverage?</td>
<td>0=never; 1=more than 12 months; 2=more than 30 days less than one year; 3=within 30 days</td>
</tr>
<tr>
<td>10</td>
<td>During the past 30 days, how often did you use alcohol (beer, wine, hard liquor)?</td>
<td>0=no use; 1=1-5; 2=6-9; 3=10-19; 4=20-30</td>
</tr>
<tr>
<td>11</td>
<td>If you drink alcohol, (beer, wine, hard liquor), how much do you drink at one time?</td>
<td>0=no use; 1=one can/drink; 2=two cans/drinks; 3=three cans/drinks; 4=four cans/drinks; 5=five cans/drinks; 6=six or more cans/drinks</td>
</tr>
<tr>
<td>12</td>
<td>In the past 30 days, how often do you get drunk (buzzed)?</td>
<td>0=no use; 1=less than once a month; 2=once or twice a month; 3=about once a week; 4=several times a week</td>
</tr>
<tr>
<td>13</td>
<td>In the past year, how often have you used alcohol (beer, wine, hard liquor)?</td>
<td>0=no use; 1=occasionally; 2=monthly; 3=weekly; 4=daily</td>
</tr>
</tbody>
</table>

Section 3: Risk.

Items 14-20 collected information related to adolescent perception of risk. Items elicit responses regarding perceived harm of using marijuana, alcohol, and prescription drugs. Table 8 presents the items and response options for risk behaviors. The majority of these items (14, 15,
17-20) use a 5 point scale indicating the level of risk, with 0 as great risk and 4 as no risk, such that a high score indicates negative behavior.

Table 8

Survey Items and Response Scale for Risk

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Text</th>
<th>Response Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>How much do people risk harming themselves physically and in other ways when they smoke marijuana once a month?</td>
<td>0=great risk; 1= moderate risk; 2= slight risk; 3=no risk</td>
</tr>
<tr>
<td>15</td>
<td>How much do people risk harming themselves physically and in other ways when they smoke marijuana once or twice a week?</td>
<td>0=great risk; 1= moderate risk; 2= slight risk; 3=no risk</td>
</tr>
<tr>
<td>16</td>
<td>How difficult or easy would it be for you to get some marijuana, if you wanted some?</td>
<td>0=probably impossible; 1=very difficult; 2=fairly difficult; 3=fairly easy; 4=very easy</td>
</tr>
<tr>
<td>17</td>
<td>How much do people risk harming themselves physically and in other ways when they have four or five drinks of an alcoholic beverage nearly every day?</td>
<td>0=great risk; 1= moderate risk; 2= slight risk; 3=no risk</td>
</tr>
<tr>
<td>18</td>
<td>How much do people risk harming themselves physically and in other ways when they have five or more drinks of an alcoholic beverage once or twice a week?</td>
<td>0=great risk; 1= moderate risk; 2= slight risk; 3=no risk</td>
</tr>
<tr>
<td>19</td>
<td>How much do people risk harming themselves physically and in other ways when they use prescription pain relievers once a month?</td>
<td>0=great risk; 1= moderate risk; 2= slight risk; 3=no risk</td>
</tr>
<tr>
<td>20</td>
<td>How much do people risk harming themselves physically and in other ways when they use prescription pain relievers once or twice a week?</td>
<td>0=great risk; 1= moderate risk; 2= slight risk; 3=no risk</td>
</tr>
</tbody>
</table>

Section 4: Prescription Drugs.

Items 21-25 collected information related to prescription drug use. Measured items elicit responses of aspects such as use, age of first use, and frequency of use. Since a variety of time
frames are posed, several response scales are utilized. Table 19 presents the items and response options for the prescription drug subscale.

Table 9

**Survey Items and Response Scale for Prescription Drugs**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Text</th>
<th>Response Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Have you ever, even once, used another person’s prescription drugs (Darvocet, Darvon, Tylenol with codeine, Vicodin, Lortab, or Lorcet) that was not prescribed for you or that you took only for the experience or feeling it caused?</td>
<td>0=No; 1=Yes</td>
</tr>
<tr>
<td>22</td>
<td>If you have ever used someone’s prescription drugs, how old were you when you first began?</td>
<td>0=don’t use; 1=over 18 years; 2=17-18 years; 3=15-16 years; 4=13-14 years; 5=11-12 years; 6=9-10 years; 7=under 9 year</td>
</tr>
<tr>
<td>23</td>
<td>How long has it been since you last used any prescription pain reliever that was not prescribed for you or that you took only for the experience or feeling it caused?</td>
<td>0=never; 1=more than 12 months; 2=more than 30 days less than one year; 3=within 30 days</td>
</tr>
<tr>
<td>24</td>
<td>During the past 30 days, how often did you use another person’s prescription drugs?</td>
<td>0=no use; 1=1-5; 2=6-9; 3=10-19; 4=20-30</td>
</tr>
<tr>
<td>25</td>
<td>In the past year, how often have you used someone’s prescription drugs?</td>
<td>0=no use; 1=occasionally; 2= monthly; 3=weekly; 4=daily</td>
</tr>
</tbody>
</table>

**Section 5: Youth Experience**

Items 26-36 collected information related to youth experience. Items elicit responses regarding education, feelings about school, importance of schoolwork, and delinquency. Five items (26-30) were used to collect data on a students perceived connectedness (like/dislike school, meaningfulness of school, teacher feedback). The remaining items (31-36) collected data on peer drug use and delinquency. Since a variety of youth aspects are posed, several response scales are utilized. Table 10 presents the items and response options for the youth experience subscale.
### Table 10

**Survey Items and Response Scale for Youth Experience**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Text</th>
<th>Response Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>Some parents decide to educate their children at home rather than send them to school. Have you been home-schooled at any time during the past 12 months?</td>
<td>0=No; 1=Yes</td>
</tr>
<tr>
<td>27</td>
<td>Which of the statements below best describes how you felt overall about going to school during the past 12 months?</td>
<td>0=you liked going to school a lot; 1=you kind of liked going to school; 2=you didn’t like going to school very much; 3=you hated going to school</td>
</tr>
<tr>
<td>28</td>
<td>During the past 12 months, how often did you feel that the school work you were assigned to do was meaningful and important?</td>
<td>0=always; 1=sometimes; 2=seldom; 3=never</td>
</tr>
<tr>
<td>29</td>
<td>How important are the things you have learned in school during the past 12 months are going to be to you later in life?</td>
<td>0=very important; 1=somewhat important; 2=somewhat unimportant; 3=very unimportant</td>
</tr>
<tr>
<td>30</td>
<td>During the past 12 months, how often did your teachers at school let you know when you were doing a good job with your school work?</td>
<td>0=always; 1=sometimes; 2=seldom; 3=never</td>
</tr>
<tr>
<td>31</td>
<td>How many of the students in your grade at school would you say use marijuana or hashish?</td>
<td>0=none of them; 1=a few of them; 2=most of them; 3=all of them</td>
</tr>
<tr>
<td>32</td>
<td>How many of the students in your grade at school would you say drink alcoholic beverages?</td>
<td>0=none of them; 1=a few of them; 2=most of them; 3=all of them</td>
</tr>
<tr>
<td>33</td>
<td>How many of the students in your grade at school would you say use prescription pain relievers as a drug?</td>
<td>0=none of them; 1=a few of them; 2=most of them; 3=all of them</td>
</tr>
<tr>
<td>34</td>
<td>During the past 30 days, how many times have you been in trouble with your parents (i.e. grounding, denied privileges)?</td>
<td>0=never; 1=once; 2=twice; 3=3-5 times; 4=6-9 times; 5=10 or more times</td>
</tr>
<tr>
<td>35</td>
<td>During the past 30 days how many times have you been in trouble at school (i.e. visited the principal’s office, suspension)?</td>
<td>0=never; 1=once; 2=twice; 3=3-5 times; 4=6-9 times; 5=10 or more times</td>
</tr>
<tr>
<td>36</td>
<td>During the past 30 days, how many times have you physically fought?</td>
<td>0=never; 1=once; 2=twice; 3=3-5 times; 4=6-9 times; 5=10 or more times</td>
</tr>
</tbody>
</table>
Data Collection

The student survey was administered by the school district’s wellness committee in May of 2011. The paper-based survey was given to the entire student population grades 6-12 at Great Buckeye School District on May 25, 2011 at the same time of day. Seniors were not present on May 25th; the student survey was given to graduating students on May 26, 2011, directly following graduation practice. Absent students were not given an opportunity to participate to reduce sharing of answers or prepared answers.

Students were allotted 60 minutes to complete the questionnaire; however, special needs students were granted additional time to navigate and answer the survey. Special needs students were also allowed to have the survey read aloud and in small group settings. Students with learning disabilities were also allowed to ask clarifying questions about or concerning the survey questions or answers. Surveys were administered by teachers and certified staff. School administrators and principals were not present during the administration of the survey to avoid any concerns by the students that the information generated would be used for punitive sanctions.

When the survey was administered to students, teachers read the directions orally to adequately present the directions to all students; every effort was made to ensure students understood the survey procedures and survey expectations. Survey confidentiality was a high priority; students were encouraged and reminded to keep the documents anonymous by not writing names on the survey. Students were instructed to complete the survey to the best of their knowledge and experience; once completed, surveys were placed in large envelopes. Completed surveys were returned to the wellness committee. A member of the classified staff was paid to transfer each survey answer from the document to a Microsoft excel spreadsheet. The hard copy
of each survey was housed in the high school office. In addition, a digital copy was kept on file with district leadership.

Since the YHRS collected no identifiable information, all data was anonymous. Each student was identified as anonymous #1, anonymous #2, anonymous #3, and so on; each number corresponding to a number of a participant. The Great Buckeye School District granted written permission to use the data.

**Research Questions**

1. Do risk behaviors differ by gender, grade level, or family structure among Great Buckeye Secondary School students?

2. Are the risk behaviors, alcohol use and marijuana use, of the Great Buckeye Secondary School students significantly different from national levels?


**Data Analysis**

The variables in this study were collected from the student survey results scored and recorded by the school district. Three demographic variables were analyzed: gender, grade level, and family structure. Five risk factors were assessed: (1) marijuana use (items 1-6); (2) alcohol use (items 7-13); (3) prescription drugs (items 14-20); (4) delinquency (items 34-36); and 5) school connectivity (items 26-30); each of which is quantitative. Subscale scores were generated by calculating the sum of subscale items.

A variety of statistical methods were utilized (see Table 1). Research Question 1 examined group differences in the risk behaviors with respect to the categorical variables of gender, grade level, and family structure. Family structure was defined as: 1) both parents; 2)
single parent; and 3) Other. This first research question utilized both a t-test of independent samples and ANOVA to examine group differences. Research Question 2 utilized a t-test of single sample to compare the district’s risk levels to national norms. National norms were identified through the use of the U.S. Department of Health and Human Services’ Substance Abuse and Mental Health Services Administration published results of the 2010 National Survey on Drug Use and Health (NSDUH) findings (2012).

Table 11

Research Questions and Data Analysis

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Independent Variables</th>
<th>Dependent Variable</th>
<th>Data Analysis</th>
</tr>
</thead>
</table>
| 1. Do risk behaviors differ by gender, grade level, or family structure among Great Buckeye Secondary School students? | • Gender  
• Grade Level  
• Household Composition | • Marijuana Use  
• Alcohol Use  
• Prescription Use  
• Delinquency  
• School Connectivity | t-test of independent samples  
ANOVA |
| 2. Are the risk behaviors, alcohol use and marijuana use, of the Great Buckeye Secondary School students significantly different from national levels? | • Marijuana Use  
• Alcohol Use  
• Prescription Use  
• Delinquency | National norms | t-test of single sample |
| 3. What risk factor(s) best predict student-school connectivity among Great Buckeye Secondary School students? | • Marijuana Use  
• Alcohol Use  
• Prescription Use  
• Delinquency  
• Household Composition  
• Gender  
• Grade Level | School Connectivity (Quant) | Pearson Correlation  
Multiple Regression |

Finally, a person correlation and forward multiple regression analysis were performed to examine Research Question 3 to determine which independent variables—marijuana use, alcohol
use, prescription drugs, delinquency, household composition, gender, and grade level—best predict the dependent variable of student-school connectivity. In this analysis, the demographic variables of gender, grade level, and family structure were treated as interval/ratio variables. Forward multiple regression can be used when the study is exploratory in nature (Mertler & Vannatta, 2005).

**Assumptions**

A number of assumptions were made throughout this study. The researcher assumed that the data provided by the Great Buckeye Secondary School were collected in a consist manner with the highest regard for student privacy. The researcher also assumed: that each student answered the survey honestly and without fear of punishment or consequence, and that the school district provided all data collected and that no omissions were made to change or alter the results.
CHAPTER IV. RESULTS

This chapter presents the results of the data analysis related to student risk behaviors and adolescent self-perceived student-school connectedness. Utilizing the Statistical Package for Social Sciences (SPSS) descriptive statistics, t-tests of independent samples, t-tests of single samples, ANOVAs, non-parametric binomial test, Pearson Correlation, and multiple regression will be used to analyze the data sets. The chapter will begin with descriptive statistics of the demographic characteristics, student substance use, student risk, and student-school connectedness. Chapter 4 will continue with student drug use response data in comparison with national trend data; the chapter will conclude with the results from the correlational analysis of risk behaviors and student-school connectedness.

Descriptive Results

Demographics

Demographic information was collected along with the responses to the 36 items on the questionnaire administered to students in a secondary school, grades 6 through 12 (see Table 12). Five-hundred fifty-seven students participated in the study including 259 males (43.2%) and 291 females (48.5%); seven students did not indicate gender when responding. Student ages ranged from 10 to 18+ years old with the majority of students being 14-15 years of age (n=201) (see Table 13). The four demographic questions examined household composition, indicating with whom the student lived. Options included living with both parents (mom and dad), a single parent (mom only or dad only), or other (grandparents, other family members, or other than family). Two-hundred ninety-nine of the participants (54.9%) lived in a two parent household including a mother and a father, 201 participants indicated living with a single parent (36.9%), and 44 participants (8.1%) live with someone other than a parent.
Table 12

*Descriptive Statistics for Grade Level*

<table>
<thead>
<tr>
<th>Grade</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>98</td>
<td>17.9</td>
</tr>
<tr>
<td>7</td>
<td>88</td>
<td>16.0</td>
</tr>
<tr>
<td>8</td>
<td>104</td>
<td>18.9</td>
</tr>
<tr>
<td>9</td>
<td>97</td>
<td>17.7</td>
</tr>
<tr>
<td>10</td>
<td>68</td>
<td>12.4</td>
</tr>
<tr>
<td>11</td>
<td>63</td>
<td>11.5</td>
</tr>
<tr>
<td>12</td>
<td>31</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Table 13

*Descriptive Statistics for Age Categories*

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-11</td>
<td>17</td>
<td>3.1</td>
</tr>
<tr>
<td>12-13</td>
<td>161</td>
<td>29.5</td>
</tr>
<tr>
<td>14-15</td>
<td>201</td>
<td>36.8</td>
</tr>
<tr>
<td>16-17</td>
<td>138</td>
<td>25.3</td>
</tr>
<tr>
<td>18+</td>
<td>29</td>
<td>5.3</td>
</tr>
</tbody>
</table>

**Substance Use**

Alcohol, marijuana, and prescription drug use were examined through multiple survey items. The majority of survey participants reported no use of substances examined. The highest percentage of nonuse was prescription drugs (85.7%), followed by marijuana (79.3%), and alcohol (55.9%). These results represent a positive and healthy learning environment; however, results do show nearly half of the students in the building have used alcohol.

When indicating use during one’s lifetime, 20.5% had used marijuana 44.1% had used alcohol, and 12.2% had used prescription drugs. Alcohol use was the substance most consumed by the sample; of these students, a wide range of alcohol use was indicated. Of participants who indicated drinking alcohol, 14.8% had consumed one drink, only 6.9% consumed two drinks,
4.5% consumed three, 4.7% consumed four, 2.4% consumed five, and 6.3% had six or more drinks.

Age of initial use of marijuana, alcohol, and prescription drugs was also reported (see Table 14). The majority of users indicated onset use of marijuana (8.9%) and alcohol (15.5%) during ages 13-14, whereas the greatest percentage of users indicated initial prescription drug use (5.1%) at ages 11-12. Results also showed that substance users were more likely using on a regular basis (See Table 15), as 9.2% had used marijuana, 17.8% had used alcohol, and 7.3% had used prescription drugs within the 30 days previous to the survey being given.

Table 14

*Descriptive Statistics for Initial Use: Percentage of First Use by Age*

<table>
<thead>
<tr>
<th></th>
<th>Marijuana Use</th>
<th>Alcohol Use</th>
<th>Prescription Drug Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Use</td>
<td>N=551</td>
<td>N=549</td>
<td>N=551</td>
</tr>
<tr>
<td>Under 9</td>
<td>.5</td>
<td>.2</td>
<td>.4</td>
</tr>
<tr>
<td>9-10</td>
<td>.7</td>
<td>2.4</td>
<td>.5</td>
</tr>
<tr>
<td>11-12</td>
<td>4.7</td>
<td>12.9</td>
<td>5.1</td>
</tr>
<tr>
<td>13-14</td>
<td>8.9</td>
<td>15.5</td>
<td>4.4</td>
</tr>
<tr>
<td>15-16</td>
<td>3.4</td>
<td>8.0</td>
<td>1.8</td>
</tr>
<tr>
<td>17-18</td>
<td>1.6</td>
<td>1.6</td>
<td>.7</td>
</tr>
<tr>
<td>Over 18</td>
<td>.7</td>
<td>3.5</td>
<td>1.5</td>
</tr>
</tbody>
</table>

With further examination into the frequency of use within a 30 day period, the majority of users responded using on 1 to 5 different occasions (see Table 16). Of the identified substance users, 15.3% reported being stoned and 31% reported being buzzed within the past 30 days. Of participants who indicated marijuana use, 5.5% of them reported using marijuana several times a week. This indicates that, of the identified marijuana users, the highest percentage (5.5%) would be considered heavy users (see Table 17).
Results showed 4.5% of survey participants indicated using marijuana and 2.4% used alcohol on more than 20 occasions in the past 30 days. These results indicate that there is a population within the school; however small, who use illegal drugs on nearly a daily basis. During the past year, users indicated 36.2% using alcohol, 12.3% prescription drugs, and 18% of students indicated using marijuana during their lifetime (see Table 18).

Table 15

*Descriptive Statistics: Percent of Most Recent Use*

<table>
<thead>
<tr>
<th></th>
<th>Marijuana Use</th>
<th>Alcohol Use</th>
<th>Prescription Drug Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=552</td>
<td>N=551</td>
<td>N=549</td>
</tr>
<tr>
<td>No Use</td>
<td>79.5</td>
<td>55.2</td>
<td>80.1</td>
</tr>
<tr>
<td>Within past 30 days</td>
<td>9.2</td>
<td>17.8</td>
<td>7.3</td>
</tr>
<tr>
<td>More than 30 days/ less than 1 year</td>
<td>6.3</td>
<td>16.2</td>
<td>7.7</td>
</tr>
<tr>
<td>More than 1 year</td>
<td>4.9</td>
<td>10.9</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Table 16

*Descriptive Statistics: Percent of Use for the Number of Incidents in Past 30 Days*

<table>
<thead>
<tr>
<th></th>
<th>Marijuana Use</th>
<th>Alcohol Use</th>
<th>Prescription Drug Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=552</td>
<td>N=545</td>
<td>N=546</td>
</tr>
<tr>
<td>No Use</td>
<td>85.9</td>
<td>70.6</td>
<td>88.5</td>
</tr>
<tr>
<td>1-5</td>
<td>6.9</td>
<td>21.8</td>
<td>8.6</td>
</tr>
<tr>
<td>6-9</td>
<td>.9</td>
<td>3.1</td>
<td>1.5</td>
</tr>
<tr>
<td>10-19</td>
<td>1.8</td>
<td>2.0</td>
<td>.7</td>
</tr>
<tr>
<td>20+</td>
<td>4.5</td>
<td>2.4</td>
<td>.7</td>
</tr>
</tbody>
</table>

Use may be impacted by peers within the adolescent’s life, whether at school or at home. Results showed only 12.6% of students had no friends who used marijuana, 10.9% of their friends used alcohol, and 25.1% had no friends who used prescription drugs (see Table 19).

Perceived risk can also impact student drug use; risk variables examined students’ perceptions of health risks associated with substance use. Results showed approximately 19% of respondents believed there was no risk associated with monthly marijuana use, and nearly 30% believed there
was no risk in monthly use of prescription drugs. Results also showed that 13.9% of students indicated no risk in weekly use of marijuana, 9.1% risk with alcohol use, and 17.2% in weekly prescription drug use (see Table 20).

Table 17

*Descriptive Statistics: Percent of use for the Number of times getting Buzzed in Past 30 Days*

<table>
<thead>
<tr>
<th></th>
<th>Marijuana Use</th>
<th>Alcohol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=549)</td>
<td>(N=548)</td>
</tr>
<tr>
<td>No use</td>
<td>84.7</td>
<td>69.0</td>
</tr>
<tr>
<td>Less than once</td>
<td>4.9</td>
<td>17.3</td>
</tr>
<tr>
<td>Once or twice</td>
<td>2.2</td>
<td>6.8</td>
</tr>
<tr>
<td>Once weekly</td>
<td>2.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Several times weekly</td>
<td>5.5</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Table 18

*Descriptive Statistics: Percent of Frequency Level of Use Past Year*

<table>
<thead>
<tr>
<th></th>
<th>Marijuana Use*</th>
<th>Alcohol Use</th>
<th>Prescription Drug Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=551)</td>
<td>(N=552)</td>
<td>(N=552)</td>
</tr>
<tr>
<td>No use</td>
<td>82.0</td>
<td>63.8</td>
<td>87.7</td>
</tr>
<tr>
<td>Occasionally</td>
<td>7.8</td>
<td>26.3</td>
<td>8.0</td>
</tr>
<tr>
<td>Monthly</td>
<td>1.1</td>
<td>4.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Weekly</td>
<td>3.6</td>
<td>4.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Daily</td>
<td>5.4</td>
<td>.7</td>
<td>1.1</td>
</tr>
</tbody>
</table>

*Marijuana question asked use during lifetime*

Table 19

*Percent of Perceived Friends Using Drugs \((n=549)\)*

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>Few</th>
<th>Most</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many friends use marijuana</td>
<td>12.6</td>
<td>40.1</td>
<td>43.5</td>
<td>3.5</td>
</tr>
<tr>
<td>How many friends drink alcohol</td>
<td>10.9</td>
<td>34.0</td>
<td>50.2</td>
<td>4.9</td>
</tr>
<tr>
<td>How many friends use prescription drugs</td>
<td>25.1</td>
<td>58.3</td>
<td>14.9</td>
<td>1.6</td>
</tr>
</tbody>
</table>
Youth Experience

Youth experience variables examine student-school connectedness and delinquent behavior. Student-school connectivity was examined through three aspects of student-school life: meaningfulness of school work, positive teacher relations, and importance of school work. Results showed that roughly 68% of students either sometimes or always felt school work was meaningful and had positive teacher relationships, leaving 32% who seldom or never experienced meaningful school work or positive teacher feedback. Approximately 86% felt that school work was somewhat or very important (see Table 21). Delinquency was examined through student misbehaviors (including physical fighting) at school and home within the past 30 days. Survey results showed 57.8% of all students had been in trouble at home, 23.1% had been in a physical fight, and 24.7% had been in trouble at school (see Table 22).

Table 20

Descriptive Statistics: Percent of Perceived Risk (n=548)

<table>
<thead>
<tr>
<th></th>
<th>No Risk</th>
<th>Slight Risk</th>
<th>Moderate Risk</th>
<th>Great Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marijuana Use Monthly</td>
<td>18.9</td>
<td>26.9</td>
<td>27.9</td>
<td>26.3</td>
</tr>
<tr>
<td>Marijuana Use Weekly</td>
<td>13.9</td>
<td>19.3</td>
<td>28.5</td>
<td>38.3</td>
</tr>
<tr>
<td>Alcohol Use Daily</td>
<td>8.0</td>
<td>11.3</td>
<td>25.1</td>
<td>55.6</td>
</tr>
<tr>
<td>Alcohol Use Weekly</td>
<td>9.1</td>
<td>21.7</td>
<td>34.1</td>
<td>35.0</td>
</tr>
<tr>
<td>Prescription Drug Use</td>
<td>29.6</td>
<td>33.3</td>
<td>19.8</td>
<td>17.3</td>
</tr>
<tr>
<td>Monthly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prescription Drug Use</td>
<td>17.2</td>
<td>26.8</td>
<td>29.4</td>
<td>26.6</td>
</tr>
<tr>
<td>Weekly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Summary of Subscales

Respective survey items were summed to calculate the subscales of alcohol, marijuana, prescription drugs, delinquency, risk, and connectivity. Table 23 represents the summary of items, scale range, mean, and standard deviation of each subscale. For the use of this survey, the higher score indicates a greater negative impact on student life. For subscales of alcohol use, marijuana use, and prescription drug use, the higher the score the greater the use. Similarly, for
the subscale delinquency, the higher the score the more concerning the student’s behavior. A high score in connectivity indicates the student feels low levels of connectedness to school; concerning risk, the higher the score the greater the perceived risk.

Table 21

*Descriptive Statistics: Percent of School Connectivity (n=546)*

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Sometimes</th>
<th>Seldom</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaningful School Work</td>
<td>21.1</td>
<td>46.5</td>
<td>20.2</td>
<td>12.2</td>
</tr>
<tr>
<td>Positive Teacher Feedback</td>
<td>22.9</td>
<td>46.5</td>
<td>22.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Very Important</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How important is the school work</td>
<td>39.6</td>
<td>47.1</td>
<td>9.3</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Table 22

*Descriptive Statistics: Percent Delinquency Behavior Past 30 Days (n=550)*

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Once</th>
<th>Twice</th>
<th>3-5 Times</th>
<th>6-9 Times</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trouble with parents, grounded</td>
<td>42.2</td>
<td>19.1</td>
<td>12.9</td>
<td>13.3</td>
<td>4.7</td>
<td>7.8</td>
</tr>
<tr>
<td>Physically fought/ fighting</td>
<td>76.9</td>
<td>12.0</td>
<td>5.6</td>
<td>2.9</td>
<td>0.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Trouble at school, suspended</td>
<td>75.3</td>
<td>12.0</td>
<td>5.6</td>
<td>2.9</td>
<td>1.6</td>
<td>2.4</td>
</tr>
</tbody>
</table>

**Inferential Results**

**Research Question 1**

Do risk behaviors differ by gender, grade level, or household among Great Buckeye Secondary School students?
Gender Differences

Gender differences in alcohol use, marijuana use, prescription use, delinquency, risk, and connectivity were examined using a t-test of independent samples. The number of males \((n=255)\) and females \((n=290)\), was consistent for each test. Alcohol use was the only variable that showed significant differences between gender with females reporting higher alcohol use than males; \(t(543) = -2.53, p=0.012\), two-tailed. (see Table 24).

Table 23

Summary of Subscales

<table>
<thead>
<tr>
<th>Items</th>
<th>Scale Range</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol use</td>
<td>7-13, 32</td>
<td>0-31</td>
<td>7.37</td>
</tr>
<tr>
<td>Marijuana use</td>
<td>1-6, 31</td>
<td>0-26</td>
<td>4.02</td>
</tr>
<tr>
<td>Prescription use</td>
<td>21-25, 33</td>
<td>0-22</td>
<td>2.42</td>
</tr>
<tr>
<td>Delinquency</td>
<td>34-36</td>
<td>0-15</td>
<td>2.37</td>
</tr>
<tr>
<td>Risk</td>
<td>14-20</td>
<td>0-28</td>
<td>15.45</td>
</tr>
<tr>
<td>Connectivity</td>
<td>26-30</td>
<td>0-20</td>
<td>4.61</td>
</tr>
</tbody>
</table>

Table 24

Summary of t-Test Results for Gender

<table>
<thead>
<tr>
<th></th>
<th>Male (N=255)</th>
<th>Female (N=290)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Alcohol</td>
<td>6.60</td>
<td>6.64</td>
<td>8.04</td>
<td>6.72</td>
</tr>
<tr>
<td>Marijuana</td>
<td>3.71</td>
<td>5.86</td>
<td>4.34</td>
<td>5.90</td>
</tr>
<tr>
<td>Prescription</td>
<td>2.17</td>
<td>3.42</td>
<td>2.64</td>
<td>3.62</td>
</tr>
<tr>
<td>Delinquency</td>
<td>2.36</td>
<td>2.94</td>
<td>2.39</td>
<td>2.64</td>
</tr>
<tr>
<td>Risk</td>
<td>15.73</td>
<td>4.96</td>
<td>15.27</td>
<td>4.75</td>
</tr>
<tr>
<td>Connectivity</td>
<td>4.67</td>
<td>2.69</td>
<td>4.53</td>
<td>2.35</td>
</tr>
</tbody>
</table>

Grade Level Differences

Analysis of variance (ANOVA) was used to examine the means differences of grades levels (see Tables 26 and 27): 6\(^{th}\) \((N=98)\), 7\(^{th}\) \((N=88)\), 8\(^{th}\) \((N=104)\), 9\(^{th}\) \((N=97)\), 10\(^{th}\) \((N=68)\), 11\(^{th}\)
(N=63), 12th (N=31). All subscales produced significant grade level differences. When comparing all grades levels in the subcategory of alcohol use, the results showed grade level differences between 6th and 7th grades in alcohol use, marijuana use, and prescription drug use when compared to grades 8, 9, 10, 11, and 12 (see Table 25).

Grade 8 was also significantly lower when compared to grades 9, 10, 11, and 12 in marijuana use. When comparing grades levels in use of prescription drugs, grade 6 had significantly lower use than grades 9, 11, and grade 7 use was lower than grade 11. In the subcategory of delinquent behavior, grade 11 significantly differed from grades 6, 7, and 8. Delinquent behavior was higher in the middle grades when compared to high school grades. Grade 7 significantly differed from grades 8, 9, 10, and 11 when examining perceived risk. Seventh grade had the highest awareness of the risk of using illegal substances. Lastly, grades 8, 9, and 10 had the lowest levels of student-school connectedness; while grades 6 and 7 had the highest levels of school connectedness (see Table 26).

Table 25

Substance Use by Grade Level

| Grade | Alcohol Use | | Marijuana Use | | Prescription Drug Use |
|-------|-------------|-----------------------------|-----------------------------|-----------------------------|
|       | M           | SD                         | M                           | SD                         |
| 6 (N=98) | 3.61        | 4.76                        | 1.89                        | 3.55                        |
| 7 (N=88)  | 4.67        | 4.59                        | 1.44                        | 2.17                        |
| 8 (N=104) | 6.60        | 5.89                        | 2.57                        | 3.98                        |
| 9 (N=97)  | 10.20       | 7.37                        | 6.30                        | 7.29                        |
| 10 (N=68) | 8.60        | 6.52                        | 5.31                        | 6.29                        |
| 11 (N=63) | 9.78        | 7.00                        | 5.84                        | 6.76                        |
| 12 (N=31) | 12.84       | 7.71                        | 9.77                        | 8.27                        |

The highest levels of alcohol use were seen in grades 9 and 12; the lowest levels of use were found in grades 6, 7, and 8. Similarly, marijuana use was highest in the high-school grades 9-12; again the lowest levels of use were seen in the middle grades 6-8. However, the middle
grades had the highest levels of delinquent behavior. When comparing perceived risk of using alcohol, marijuana, and prescription drugs; grades 6 and 7 had the highest awareness of the risk associated with use substances; grades 6 and 7 also had the highest levels of student-school connectedness among all surveyed grades (see Table 27).

Table 26
Risk Behaviors by Grade Level

<table>
<thead>
<tr>
<th>Grade</th>
<th>Delinquency</th>
<th>Risk</th>
<th>Connectivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>6 (N=98)</td>
<td>2.75</td>
<td>3.04</td>
<td>14.88</td>
</tr>
<tr>
<td>7 (N=88)</td>
<td>2.70</td>
<td>2.61</td>
<td>13.37</td>
</tr>
<tr>
<td>8 (N=104)</td>
<td>2.88</td>
<td>3.36</td>
<td>16.33</td>
</tr>
<tr>
<td>9 (N=97)</td>
<td>2.16</td>
<td>2.41</td>
<td>16.71</td>
</tr>
<tr>
<td>10 (N=68)</td>
<td>2.12</td>
<td>2.60</td>
<td>15.56</td>
</tr>
<tr>
<td>11 (N=63)</td>
<td>1.29</td>
<td>1.76</td>
<td>15.62</td>
</tr>
<tr>
<td>12 (N=31)</td>
<td>1.97</td>
<td>2.93</td>
<td>16.03</td>
</tr>
</tbody>
</table>

Household Composition Differences

An ANOVA was used to compare the household composition type (living with both parents, one parent, or other), for the various risk subscales. Results revealed that household composition was significantly different for all three substances (alcohol, marijuana, and prescription drugs) and school connectivity. No significant differences in delinquency and risk emerged for the household composition variable (see Table 28). In all instances, students in a non-parent household had significantly more negative behavior (higher substance use and lower connectivity) than students living with both parents.

Research Question 2

Are the risk behaviors, alcohol use and marijuana use of the Great Buckeye Secondary School students significantly different from national levels?
Table 27

**ANOVA Results – Grade Level Differences of Substance use and Risk**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Results</th>
<th>Group Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>F(6,542)=18.77, p&lt;.001</td>
<td>Grades 6 and 7 were significantly lower than grades 8, 9, 10, 11, 12; Grade 8 significantly lower than grades 9, 12</td>
</tr>
<tr>
<td>Marijuana</td>
<td>F(6,538)=17.63, p&lt;.001</td>
<td>Grades 6, 7, 8 significantly lower than grades 9, 10, 11, 12</td>
</tr>
<tr>
<td>Prescription Drug</td>
<td>F(6,542)=6.06, p&lt;.001</td>
<td>Grade 6 significantly lower than grades 9 and 11; Grade 7 significantly lower than grade 11</td>
</tr>
<tr>
<td>Delinquency</td>
<td>F(6,538)=3.04, p&lt;.001</td>
<td>Grade 11 significantly lower than grades 6, 7, 8</td>
</tr>
<tr>
<td>Risk</td>
<td>F(6,540)=4.91, p&lt;.001</td>
<td>Grade 7 significantly lower than grades 8, 9, 10, 11</td>
</tr>
<tr>
<td>Connectivity</td>
<td>F(6,538)=6.86, p&lt;.001</td>
<td>Grades 6 and 7 significantly lower than grades 8, 9, 10, 11</td>
</tr>
</tbody>
</table>

Table 28

**ANOVA Results – Household Composition**

<table>
<thead>
<tr>
<th></th>
<th>Both Parents (N=297)</th>
<th>Single Parent (N=200)</th>
<th>Other (N=44)</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Alcohol</td>
<td>6.76</td>
<td>6.54</td>
<td>7.54</td>
<td>6.34</td>
<td>10.45</td>
</tr>
<tr>
<td>Marijuana</td>
<td>3.47</td>
<td>5.42</td>
<td>4.33</td>
<td>5.81</td>
<td>6.45</td>
</tr>
<tr>
<td>Prescription</td>
<td>2.23</td>
<td>3.30</td>
<td>2.37</td>
<td>3.39</td>
<td>4.11</td>
</tr>
<tr>
<td>Delinquency</td>
<td>2.26</td>
<td>2.76</td>
<td>2.49</td>
<td>2.74</td>
<td>2.73</td>
</tr>
<tr>
<td>Risk</td>
<td>15.13</td>
<td>4.86</td>
<td>15.83</td>
<td>4.72</td>
<td>15.68</td>
</tr>
<tr>
<td>Connectivity</td>
<td>4.34</td>
<td>2.54</td>
<td>4.87</td>
<td>2.53</td>
<td>5.05</td>
</tr>
</tbody>
</table>
Comparison to National Norms

A non-parametric binomial test was used to compare the sample and national proportions on two risk behaviors: alcohol and marijuana use. The national norm data was retrieved from The U.S. Department of Health and Human Services’ Substance Abuse and Mental Health Services Administration’s published document of the 2010 results of the 2010 National Survey on Drug Use and Health (NSDUH) findings. The annual survey is administered in all fifty states and the District of Columbia with its specific purpose to gather data on the illicit use of drugs, tobacco, and alcohol among civilian, non-institutionalized United States’ population. The sample size selected in 2010 was 85,668 people; out of the selected population 68,487 people completed the survey.

Results showed that the sample had a significantly higher percentages of alcohol and marijuana use than the national population. For the studied sample, 28% percent reported drinking alcohol within the past 30 days as compared to 13.6% of the national sample. Similar results were found for current marijuana use in which 12.9% reported use as compared to 7.4% in the national population (see Table 29). In each case, the levels of alcohol and marijuana use were significantly higher than the results found by in the NSDUH survey. To examine accurate comparisons, survey creators used survey items directly from the NSDUH in both survey questions and answer choices.

Table 29

Sample Proportions Compared to 2010 National Proportions

<table>
<thead>
<tr>
<th></th>
<th>Sample %</th>
<th>National %</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Alcohol Use</td>
<td>28.0</td>
<td>13.6</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Current Marijuana Use</td>
<td>12.9</td>
<td>7.4</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

* *Note – Use at least once in past 30 days*
Research Question 3

What risk behaviors best predict student-school connectivity among Great Buckeye Secondary School students?

Predictors of Student-school Connectedness

Pearson correlation coefficients were computed to examine the relationships among variables and then a multiple regression analysis was used to determine which variables best predicted student-school connectedness. Significant correlations (see Table 30) were observed between student-school connectivity and the following subscales: alcohol use ($r = 0.263$); marijuana use ($r = 0.234$); prescription drug use ($r = 0.190$); perceived risk ($r = 0.272$); delinquency ($r = 0.247$); grade level ($r = 0.109$); and family composition ($r = 0.108$). While the correlations were significant at the .01 level, all were less than .30 and relatively weak in strength.

Table 30

Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marijuana</td>
<td>.708**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prescription</td>
<td>.578**</td>
<td>.542**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>.358**</td>
<td>.331**</td>
<td>.275**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delinquency</td>
<td>.202**</td>
<td>.148**</td>
<td>.234**</td>
<td>.183**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.109*</td>
<td>.064</td>
<td>.059</td>
<td>-.035</td>
<td>.006</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>.375**</td>
<td>.353**</td>
<td>.233**</td>
<td>.126**</td>
<td>-.151**</td>
<td>.021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>.138**</td>
<td>.126**</td>
<td>.101*</td>
<td>.053</td>
<td>.054</td>
<td>.111*</td>
<td>.060</td>
<td></td>
</tr>
<tr>
<td>Connectivity</td>
<td>.263**</td>
<td>.234**</td>
<td>.190**</td>
<td>.272**</td>
<td>.247**</td>
<td>-.018</td>
<td>.109**</td>
<td>.108**</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Forward multiple regression analysis examined which risk factors best predicted student-school connectivity among Great Buckeye Secondary School students. Results showed that
perceived risk, delinquency, and alcohol use were the best predictors of student-school connectivity; $F(3,532)=28.08, p<.0001, R^2=.137, R^2_{adj.}=.132$. The combination of risk, delinquency, and alcohol is significant in predicting student-school connectivity; however, the model only accounts for 13.7% of variance in student-school connectivity. The regression coefficients are presented in Table 31 and indicate that the variable of risk has the strongest weight in the model.

Table 31

Regression Coefficients of Predictors of School Connectivity

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>Beta</th>
<th>$t$</th>
<th>$p$</th>
<th>Bivariate</th>
<th>Partial $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.315</td>
<td>6.817</td>
<td>.000</td>
<td>.272</td>
<td>.178</td>
<td></td>
</tr>
<tr>
<td>Risk</td>
<td>0.095</td>
<td>1.81</td>
<td>4.174</td>
<td>.000</td>
<td>.247</td>
<td>.186</td>
</tr>
<tr>
<td>Delinquency</td>
<td>0.163</td>
<td>0.18</td>
<td>4.372</td>
<td>.000</td>
<td>.263</td>
<td>.159</td>
</tr>
<tr>
<td>Alcohol</td>
<td>0.061</td>
<td>0.16</td>
<td>3.705</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Summary

This chapter presented the results of the data analysis related to student risk behaviors and adolescent self-perceived student-school connectedness (A summary of results is presented in Table 32). By utilizing the Statistical Package for Social Sciences (SPSS); descriptive statistics, t-tests of independent samples, t-tests of single samples, ANOVAs, non-parametric binomial test, Pearson Correlation, and multiple regression were used to analyze the data sets. Descriptive statistics were presented on all demographic student data and statistical analysis was performed on various data sets.

The first research question examined gender, grade level, and household composition differences. Gender differences were found in alcohol consumption; results showed females had higher levels of alcohol consumption. Additionally, females had higher uses of marijuana and prescription drugs; however, alcohol was the only variable that was significantly different.
Grade level differences were found between the middle grades (6-8) and high school grades (9-12). Higher levels of substance use were found in the high school grades; however, higher levels of delinquency were found in the middle grades. The highest level of alcohol, marijuana, and

Table 32

Research Questions and Results

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Results</th>
</tr>
</thead>
</table>
| 1. Do risk behaviors differ by gender, grade level, or family structure among Great Buckeye Secondary School students? | • Gender: when comparing means, a significant difference was found between gender groups; females had significantly higher use of alcohol.  
• Grade Level: when comparing grade levels, results showed that risk behaviors were different between middle grades (6-8) and high grades (9-12). The highest levels of substance use were indicated by grades 9 and 12; however, the high levels of delinquency were indicated in grades 6, 7, 8). Grade 9 had the lowest levels of student-school connectivity.  
• Household Composition: when comparing household composition, students who indicated living with “other” showed significantly higher use of alcohol, marijuana, prescription drugs, and the lowest levels of student-school connectivity. |
| 2. Are the risk behaviors, alcohol use and marijuana use, of the Great Buckeye Secondary School students significantly different from national levels? | • Both subscales were significantly higher from national percentages. Of the sampled population, 28% percent reported drinking alcohol within the past 30 days as compared to 13.6% of the national sample. Similar results were found in reported marijuana use; local sample 12.9% as compared to 7.4 nationally. |
prescription drug use was found in grades 9, 11, and 12. The highest levels of student-school connectivity were found in grades 6 and 7; the lowest level of student-school connectivity was found during the 9th grade year.

Lastly, differences were found when comparing household composition; students who indicated living with “other” (someone other than mom and dad, or living with mom or dad) had higher levels of alcohol, marijuana, and prescription drug use. Additionally, students living with other had the lowest levels of student-school connectivity.

The second research question compared local results of alcohol and marijuana use to national norms. Local results in both subscales were significantly higher than the national norms from national percentages identified in the National Survey on Drug Use and Health administered in 2010. The third research question examined predictors of student-school connectivity. Forward multiple regression generated a significant three factor model that risk, delinquency, and alcohol significantly predicts student-school connectivity; however, the model only accounts for 13.7% of variance in student-school connectivity.
CHAPTER V. DISCUSSION AND RECOMMENDATIONS

Chapter five presents a review and summary of this study on student risk behaviors as predictors of student-school connectivity. The chapter will first present a review of the study and the current research related to student-school connectivity and student risk behaviors. The results of the data analysis will be explored in the context of student-school connectivity theory. Recommendations for teachers and administration will be outlined; and lastly, opportunities for future research will be presented.

Review of Study

Students are more likely to succeed academically when they feel connected to school (Blum, 2005). The concept of a student-school connectivity emerged nationally as a significant factor contributing to student success in school (Libbey, 2004). Once the concept was widely accepted, a growing body of literature examined the impact and the importance of student-school connectivity in relation to positive student outcomes (academic success, classroom engagement, school participation) and adolescent norms (self-esteem, self-respect, self-control) within the school (Anderman, 2003). Schools can strengthen the student-school connection by fostering an environment that promotes higher levels of academic performance, positive social relationships with peers and adults, and healthy student behavior choices (Cohen et al., 2009).

Student-school connectivity can take many names and forms. Libbey (2004) reviewed numerous authors and research conducted on the concept of school connectedness and identified 21 concepts as aspects of student-school connectivity spanning from years 1995 through the early 2000’s. Even though studies differed, nine aspects of school connectedness were consistently used among research: academic engagement, a sense of belonging,
discipline/fairness, extracurricular activity, likes school, student voice, relationships, safety/well-being, and teacher/adult support.

Many school level concepts, structures, and policies can impact a student’s connectivity to school. Class sizes, departmentalization, fair and consistent rules, consistent discipline policy, academic expectations, relevance of teaching/content, parental involvement, relationships with peers and adults, and adult to adult relationships are all components of student connectedness that school leaders can directly influence on (Walters et al., 2009). The components all meet the basic needs of the students and until the basic needs of the students are met, knowledge acquisition will not take place Maslow’s Hierarchy of Needs Model (Maslow, 1970). School leaders can improve student-school connectivity by fostering an environment of positive and meaningful student adult relationships, promoting the physical and emotional safety of the students, and expecting high academic standards among the teaching staff (Blum, 2005).

School level influences are not the only variables that influence student-school connectivity. Family structures, amount of time parents and children interact, financial security, discipline, love, and parental support can influence adolescent development and school success (Jenkins, 1995).

School connectivity and family structure can also influence student risk taking behaviors and the development of pro-social norms (Jenkins, 1995; Jenkins, 1997). Risk behaviors can manifest in numerous ways and through a variety of unhealthy norms (reduced school connectedness, poor relationships with peers and adults, and mental health issues), delinquent behaviors (fighting, bullying, school non-attendance, drug involvement, and breaking school rules) and substance use (alcohol, marijuana, tobacco, prescription medications, and other illegal drugs) (Bond et al., 2007; Collins et al., 2008; Richman et al., 1998).
This correlational research study was conducted to examine which student risk behaviors (marijuana use, alcohol use, prescription drugs use, household composition, and delinquency) predict student-school connectivity among 6th through 12th grade students at the Great Buckeye School District. The participants in this study were secondary school students enrolled during May 2011 (n=557), ranging in ages from eleven years of age to adult-age students, eighteen years of age and older. The study utilized data generated from the Youth Health and Risk Survey (YHRS), which was developed to evaluate student behaviors and perceptions regarding: (1) marijuana use; (2) alcohol use; (3) prescription drugs; (4) family structure; (5) school connectivity and (6) delinquency.

Discussion

The data for this study was a secondary data received from the Great Buckeye Secondary School. The Student Health and Risk Survey was developed by the school district to gather student information and student perceptions in several student risk factors (alcohol use, marijuana use, prescription drug use, delinquent behavior, household composition, and student-school connectedness). The discussion of the results is presented in order of the research questions.

Research Question 1: Gender, Grade, and Household Composition Differences

Research question 1 examined risk differences among genders, grade levels, and household composition.

Gender

Results showed that there was a difference between males and females in alcohol consumption (p=.01) with females reporting significantly higher levels of alcohol use. Female
participants also indicated higher levels of marijuana and prescription drug use although these results were not statistically significant.

Unlike the present study, Myers (2010) found that male participants were statistically more likely than females to consume alcohol and to use illicit drugs. Males were also more likely to have peers/friends who use illicit drugs and alcohol, as well as, having increased occurrences of violent behavior. In addition, males viewed driving under the influence of drugs or alcohol as less risky behavior as compared to females (Myers, 2010). Shears et al. (2006) also found that being female reduced the likelihood of alcohol and marijuana use.

In the current study, other gender differences were observed; while not statistically significant, males perceived less risk of using illegal substances and had lower levels of student-school connectivity than females.

**Grade Level**

When examining grade level differences, grades 9 and 12 were consistently higher in alcohol consumption, marijuana use, and prescription drug use when compared to grades 6-8. Grades 9, 11, and 12 had the highest levels of substance use with grade 12 being the highest in alcohol, marijuana, and prescription drug use; grades 6 and 7 had the lowest levels of substance use. These results are similar to results by Myers in 2010 who found that older students (15 years and older) were statistically more likely to use tobacco, have friends who use tobacco, drink alcohol themselves, have family members and friends who drink alcohol, use illegal substances themselves, and have friends who use illegal substances when compared to younger students (14 years and younger).

Two explanations for the grade level differences in substance use may be the differences in class/building structure and student expectations. High school students have more freedom
and autonomy to socialize with different peer groups, and to make their own decisions about their socially appropriate norms when dealing with drugs, relationships, and behaviors. However, with freedom comes responsibility. When compared to middle grade students, high school students are more likely to be expected to become self-aware of their needs and expected to seek out assistance from teachers and staff. High school teachers and staff can create an environment that allows older students to maintain appropriate levels of academic engagement and success with minimal adult supervision (Oelsner et al., 2011).

Additionally, substance use can be influenced by teacher-student relationships. The Great Buckeye Secondary School provides all 6-8 grade students with a period of time when students work with teachers to have classroom content retaught, seek homework assistance, and to work on social issues. This additional time with teachers can foster higher levels of student-teacher rapport, as well as, provide additional adult guidance in areas of peer relations, conflict resolution, and substance use (Beane & Lipka, 2006). The increased adult supervision and support in the middle grades may contribute to the lower levels of delinquent behaviors, including drug use (Richman et al., 1998).

Interestingly, the present study found higher levels of student delinquency (in trouble with parents, in trouble at school, physical fighting) in grades 6-8 as compared to grades 9-12 with the highest level of delinquency in 8th grade. Problem behaviors created and fostered by the decreased social and developmental support can be felt throughout a student’s entire school career. Delinquent behavior early in middle school can lead to stronger bonds with deviant peers (Oelsner et al., 2011); strengthened bonds to deviant peers and affiliation with deviant subcultures can increase the likelihood of substance abuse and antisocial behavior throughout the high school years (Oelsner et al., 2011).
Grades 6 and 7 had the highest levels of student-school connectedness, while grades 8, 9, and 10 had the lowest levels of school connectedness. Prior research found that student-school connectivity decreased for students as they moved from middle school to high school grade levels (Jenkins, 1997; Oelsner et al., 2011; Richman, Rosenfeld, & Bowen, 1998). As students move from middle school to high school essential support structures change; the changes to the social structure, class schedule/class arrangements, and teacher-student relationships do not meet the developmental needs of the students (Jenkins, 1997; Oelsner et al., 2011; Richman et al., 1998).

**Household Composition**

Students who indicated household composition as “other” (not living with mom and dad or living with mom or dad) showed significantly higher levels of alcohol, marijuana, and prescription drug use when compared to students from a two-parent household. Adolescent households with a mother and a father work as a protective factor against substance use. Shears, Edwards, and Stanley (2006) found adolescents from intact two-parent households were less likely to use drugs and/or alcohol.

Students living with “other” also had significantly lower levels of student-school connectivity compared to students living with both parents (mom and dad). This result is supported by current research; students from two-parent households were more likely to have increased levels of student-school connectivity (Bergin & Bergin, 2009; Jenkins, 1995; & Shears et al., 2006). The higher levels of connectedness to school among students in two-parent households may be a result of the adolescent developmental needs (safety, security, love, support) being met in the home. A two parent household may also reduce levels of deviant and delinquent behaviors (Davis & Spillman, 2011; Hemovich, Lac, & Crano, 2011).
The current study indicates that household in which a student lives can influence the student’s behaviors and attitudes toward school. Parental/guardian guidance and care can influences adolescent development due to economic resources, less time nurturing, limited access shared social norms and morals, and less commitment to adolescent successes (Bergin & Bergin, 2009; Jenkins, 1995; & Shears et al., 2006). Adolescents lacking a two-parent household may have less parental monitoring, increased peer-dependency, openness to negative influences/subcultures, less financial resources/support, emotional support, and less influence of prosocial morals and decision making; which may elevate instances of negative student outcomes (Davis & Spillman, 2011; Hemovich et al., 2011; Shears et al., 2006).

**Research Question 2: National Comparisons**

When examining health risk behaviors among Great Buckeye Secondary School students’ use of alcohol and marijuana in relation to national levels, results showed significant differences in the use of both alcohol and marijuana. Of the sampled population, 28% percent reported drinking alcohol within the past 30 days as compared to 13.6% of the national sample; marijuana use results were similar: local sample use 12.9% as compared to 7.4 % nationally. A comparison to the national data was achieved since the compared questions used in the district survey came directly from the 2010 National Survey on Drug Use and Health (NSDUH).

The student sample in the current study lives in a rural community with a small town environment. Martino, Ellickson, and McCafrey (2008) found that alcohol consumption was higher in rural areas as compared to urban locations. Results showed that alcohol is easier to obtain than illegal/illicit drugs in rural areas; however, marijuana is easier to obtain in urban areas (Martino et al., 2008). Similar results were found in a 2006 by Shears et al., who found
higher levels of alcohol consumptions and lower levels of marijuana use among adolescents in rural areas.

Looking deeper into other comparisons between the community the school is located, national norms, and how factors may contribute to higher levels of substance use indicated several negative influences. Educational attainment within the county is lower than the national norms. High school diploma attainment (local 82.9% compared to nationally 85.4%) and bachelor degree attainment (local 9.7% compared to 28.2%) are lower than the national norms. The lower levels and rates of educational attainment could have an influence on the poverty rate. The local poverty rate (17.7%) is 3.4% higher the national average and 2.9% higher than the state average (Ohio QuickFacts from the US Census Bureau, 2013). Student socio-economics can have an influences on adolescent alcohol use (Rowe, Stewart, 2009). Households with lower economical means can have elevated levels of substance use (Rowe, Stewart, 2009). Parental job attainment of low skill/nonprofessional occupations and who have lower family affluence may have higher levels of alcohol use (Rowe, Stewart, 2009).

Students and families can be impacted by their living conditions. Possibly going hand and hand with the poverty rate, home ownership (59.9%) is 6.2% lower than the national rate. Without a stable home or living arrangement students could find themselves homelessness, marginally housed, or living between multiple homes. Families who are houseless or marginally housed have higher rates of alcohol and drug use (Eyrich-Garg, Cacciola, Carise, Lynch, & McLellan, 2008). In addition, families with no home or who are marginally housed have less social support and friends to offer assistance or help; these families can find themselves draining their local supports until they have no reliable support structure (Eyrich-Garg et al., 2008).
Research Question 3: Predictors of School Connectivity

Results showed the combination of perceived risk of substance use (perceived harm of using marijuana, alcohol, and prescription drugs), delinquency (trouble with your parents, trouble at school, and physically fought), and alcohol use are significant in predicting student-school connectivity.

School connectedness is the belief by adolescents that adults in school care about their academic success and them as individuals (Faulkner et al., 2009). Adolescent students are more likely to develop healthy norms (e.g., positive adult relationships, success academically) when a sense of school connectedness is present (CDC, 2009). School connectedness in adolescents is influenced by both internal and external influences. External factors may include positive adult relationships, clear boundaries, and positive community and school activities. Internal factors include a commitment to learning, positive values, prosocial norms, and a positive self-identity (Search Institute, 2006).

However, risk factors (e.g., unhealthy relationships with adults and peers, delinquent behaviors) can negatively influence the development of positive student-school connectedness (Bond et al., 2007; Collins et al., 2008; Richman et al., 1998). These student risk factors can begin to erode student engagement, academic self-efficacy, and sense of belonging. Connectedness among adolescents can decline due to heightened dislike for teachers, lack of interest in the learning process, and decreased feelings that school is meaningfulness (Monahan et al., 2010). Declining academic success, school failure, and school problems can increase student likelihood to use alcohol and illegal substance (Collins et al., 2008).

One explanation for the low levels of believed risk among the sample may be due to the lack of drug prevention programming. The Great Buckeye School District was not providing a
universal drug awareness and education curriculum to the student body. The school district, at one time, did support and promote the DARE (Drug Abuse Resistance Education) program; however, the DARE program was discontinued due to lack of effectiveness. More recently, however, The Great Buckeye Secondary School has implemented a drug testing programming for grades 7-12. Students involved in extracurricular activities (band, choir, sports) must complete one mandatory drug screening per year and are subjected to potential random screenings throughout the school year.

Even though the program is in effect in the school building, the drug testing policy does not impact the entire school population. In addition, the drug testing program does not offer an anti-drug curriculum to the student body. This lack of universal drug awareness and education programming may contribute to the lack of perceived risk of using alcohol and illegal drugs. The school has the capacity to help students build personal competencies (self-efficacy, self-esteem) that become protective factors against alcohol/drug use, but the same competencies can help students develop school connectedness. Additionally, student-school connectedness and academic success can also work as protective factors against substance use for students (Sale, Sambrano, Springer, & Turner, 2003).

Conclusions

Student-school connectedness has become a topic of educational research since the mid-1990s and as the educational reform becomes more standards driven, the development of school connectedness slips further and further down the priority list in schools. Understanding student-school connectedness is important, but implementing strategies to increase school connectedness must become a district priority. The present study found three primary factors that contributed to students developing low student-school connectedness: students not living with parents (students
living with other as indicated on survey), student grade level, and students who perceive little to no risk of using alcohol, marijuana, and prescription drugs.

Parental involvement is a critical factor for students’ creation of school connectivity. The current study found that students living absent of both parents had a significant increase in alcohol, marijuana, and prescription drug use, as well as, lower levels of school connectivity. The disconnect that students from non-traditional (two parent) households feel toward school is a significant reality in today’s schools. Aspects of household composition (family size, family structure, mother’s education, and family involvement in schooling) may negatively impact adolescent development of prosocial norms. Single parents, steps-parents, or guardians of children from other families may not have time to spend doing homework, opportunity to attend school events, feel obligated to attend parent teacher conferences. Household composition other than a two parent home can create added stress on children due to lack of economic stability and socio-emotional support (Jenkins, 1995).

Student grade levels can also impact student-school connectedness. The current study took place in a school building with grades 6-12 and results showed ninth grade students had the lowest level of school connectedness. The Great Buckeye Secondary School is structured to provide an increased level of support to entering sixth grade, but as students begin to mature through each grade level teachers and staff give students more responsibility and autonomy. As students transition from middle school to high school increase stress from higher levels of academic expectations and self-guidance to maintain positive social norms may lead to the development of anti-social behaviors (drugs use, academic failure, drop out, delinquency) (Cohen & Smerdon, 2009).
Results of the current study also showed the negative impact that low perceived risk and substance use have on student-school connectedness. Drug prevention education can limit or eliminate the drug use among adolescents and young adults (Botvin & Griffin, 2007). Improving drug awareness programming and drug education will provide the student a health related curriculum that focuses on the negative side effects of alcohol and drug use. Increasing prevention programming may increase student perceptions of harm from using alcohol and drugs, subsequently decreasing substance use and increasing school connectedness.

**Recommendations for Practice**

Research has shown the importance of school connectivity in the development of prosocial norms, academic success, and positive adult and peer relationships (Walters et al., 2009). Efforts to increase student-connectedness are not difficult to make and are not cost prohibitive; strategies and intervention require time and human resources. Schools can increase student connectivity by setting clear and consistent rules, creating a culture of high expectations for learning, increasing parental involvement, and fostering relationships of care and support. Strategies and interventions offered to students to increase levels of student-school connectivity are all done in effort to keep students in school and achieving academic success. Culture changes start with the people in a district and not in the district’s financial department.

Results showed household composition was a critical factor for students in the creation of school connectivity. Studies found that students living absent of both parents had a significant increase in alcohol, marijuana, and prescription drug use, as well as, lower levels of student-school connectedness. Students living with relatives, friends, or with other people who are not relation can be influenced by added stress caused by a lack of economic stability and socio-emotional support (Jenkins, 1995).
In order for students from non-two parent households to become more connected to school teachers, school administrators, and district leadership should provide family engagement opportunities. The Center for Disease Control and Prevention (2009) outlined six strategies that school personnel can implement to increase school connectedness: 1. Create decision-making processes that facilitate student, family, and community engagement, academic achievement, and staff empowerment, 2. Provide education and opportunities to enable families to be actively involved in their children’s academic and school life, 3. Provide students with the academic (self-efficacy and motivation), emotional (self-esteem and self-awareness), and social skills (including drug prevention, anti-bullying, and conflict resolution) necessary to be actively engaged in school, 4. Use effective classroom management and teaching methods to foster a positive learning environment, 5. Provide professional development and support for teachers and other school staff to enable them to meet the diverse cognitive, emotional, and social needs of children and adolescents, 6. Create trusting and caring relationships that promote open communication among administrators, teachers, staff, students, families, and communities.

Next, schools personnel need to be mindful of the grade level differences and how grade configuration can decrease student-school connectedness. Results indicated that students in the ninth grade had the lowest levels of student-school connectedness. Transition from middle school to high school can be a sensitive time for adolescents due to establishing new and meaningful experiences and developing a sense of belonging (Newman, Newman, Griffen, O’Connor, & Spas, 2007). The move from a small, safe, and familiar to a large and unknown environment and disrupt students’ sense of connectedness which can impacts a student mental health, physical health and academic achievement (Newman et al., 2007).
The transition to high school increase stress from higher levels of academic expectations and self-guidance to maintain positive social norms may lead to the development of anti-social behaviors (drugs use, academic failure, drop out, delinquency) (Cohen & Smerdon, 2009; Newman, Lohman, Newman, Myers, & Smith, 2000). Interactions with teachers and the creation of positive relationships/rapport is a vital component to enhancing students’ sense of belonging and strengthening student-school connectedness (Newman et al., 2000). Teachers can foster a caring and supportive classroom. However, the development of positive and caring relationships do not stop classroom doorway; teachers need to extend their connection with students outside the classroom. Adult and student relationships can be further enriched in activities outside the class.

Adult participation in extracurricular activities (band, choir, sports), clubs, and service groups (student council, class officers) will assist in building personal connections with students. The growth in relationships may provide students with a positive outlet for personal or social problems that before may have been shared with peers. The adult connection may help students in the development of healthy social norms (Brown & Evans, 2002).

School district and community stakeholders need to review the implementation of health education and drug awareness. Improving drug awareness programming and drug education will provide the student a health related curriculum that focuses on the negative side effects of alcohol and drug use. Increasing prevention programming may increase student perceptions of harm from using alcohol and drugs, subsequently decreasing substance use and increasing school connectedness.

Health education and awareness programming can be more effective when taught through active student involvement. Engaging activities that include role playing, smaller learning
groups, games, and small group discussions are more effective than non-interactive instructional methods (Giles, Pankratz, Ringwalt, Hansen, Dusenbury, & Jackson-Newsom, 2010). Teachers, staff, and school administration can implement awareness education programming that works as a protective factor by being student-centered and highly engaging (Giles et al., 2010).

Using the theory of situational awareness, school leadership groups and staff need to become aware of both the negative and positive of daily operations of the school building to appropriate implement strategies and interventions to address student issues (Marzano et al., 2005). Implementing an affective plan of action will require school personnel and community stakeholders to be invested in the success of the students and proactive to the needs of the students.

School leaders cannot assume every leadership role for each of the six strategy areas; therefore, a share leadership model should be established involving teachers, staff, parents, guardians, community members, and school administration. The creation of a sustained learning community and leadership groups will help share the leadership responsibilities among teachers, staff, parents, and volunteers. Sustainable school leadership must be cultivated at all levels within a district; and most importantly, all members of the leadership team commit to a shared singular vision and focus (Fullan, 2005). Leadership groups can monitor, evaluate, and support the activities implemented to nurture the culture of student-school connectedness.

**Recommendations for Future Research**

The results of this study suggest that student-school connectivity can be influenced by a number of student-level, family-level, and school-level variables. Further research opportunities should examine the specific characteristics of household composition that negatively influence adolescent development of student-school connectedness and prosocial norms. Such research
would guide schools in developing programming to strengthen the family-school connectivity to improve student outcomes.

Since the present study was limited to one school district, additional research in culturally diverse areas, urban/city school districts, and private/charter schools could further enhance the current study. Due to minimal research on school connectedness among students with disabilities, further research with this population would provide a wealth of knowledge to school leaders who work directly with students with disabilities when investigating strategies to engage this student sub-group. The research could also be expanded to examine student-school connectedness at the elementary school. Gather elementary data will allow opportunity to compare connectedness in the early grades to middle grades.

The survey utilized in the current study was created by the school district to obtain information on the student body. In future research, more questions from the national survey could be added to the student survey to allow the researcher to make additional national comparisons. The survey could be further improved if examined for validity and reliability; during the present study, the school district did not have the survey assessed for validity and reliability.

Additionally, other student level variables should be examined. The current study did not examine variables, such as extracurricular activities, socio-economic levels, and student sub-groups (racial/ethnicity and/or disabled students) that may influence student-school connectivity.

Lastly, no data was collected examining the understanding and perceptions of leadership support, schedule, policies, resources, professional development, in relationship to student self-perceptions of student-school connectedness. Regardless of any other factors that contribute to connectedness, the classroom teacher is the variable that interacts with students on a daily basis.
Classroom instruction and teacher-students relationships need to be examined to further understand what is effective in the classroom to increase student perceptions of school connectedness. Qualitative research could be utilized to further examine the importance of or impact of teachers, staff, and school leaders; observations and interviews may yield data to achieve a deeper understanding of student perceptions of the components of student-school connectedness.
REFERENCES


Demographics

Circle the answer that best describes you.

1. Gender
   A. Male
   B. Female

2. Current Age
   A. 10-11
   B. 12-13
   C. 14-15
   D. 16-17
   E. 18 or Older

3. Current Grade
   A. 6th Grade
   B. 7th Grade
   C. 8th Grade
   D. 9th Grade
   E. 10th Grade
   F. 11th Grade
   G. 12th Grade

4. Who do you live with?
   A. Mom and Dad
   B. Mom only
   C. Dad only
   D. Grandparents
   E. Other Family Members
   F. Other than Family
Survey Directions

Please read each question carefully and answer honestly. Answers on this survey will remain confidential; no identifiable information will be collected or used. The information gathered in this survey will be used to planning and addresses needs or unhealthy behaviors in the district. Data collected through this study will assist the Great Buckeye Schools in planning student and family activities and interventions, as well as, assist with improving the culture and climate. Circle the answer that best describes you. When finished, please return the survey to the teacher so it can be placed in an envelope.

Survey’s Purpose

The Great Buckeye Secondary School’s number one concern is the wellbeing and safety of our students. The survey results will assist in the implementation of in-school and after-school programs, interventions, and family nights. We strive to meet the needs of our students in the classroom and in our community. Please take the time necessary and the attention required to answer this survey in an honest and timely manner.
1. Have you ever, even once, used marijuana or hashish?
   A. YES
   B. NO

2. If you have ever smoked marijuana (grass, pot), how old were you when you first began?
   A. I don't smoke marijuana
   B. Under 9
   C. 9-10
   D. 11-12
   E. 13-14
   F. 15-16
   G. 17-18
   H. Over 18

3. How long has it been since you last smoked marijuana or hashish?
   A. Within the past 30 days
   B. More than 30 days ago but within the past 12 months
   C. More than 12 months ago
   D. Never Used Marijuana

4. During the past 30 days, how often did you smoke marijuana (grass, pot)?
   A. I don’t use marijuana
   B. 1-5
   C. 6-9
   D. 10-19
   E. 20-30

5. In the past 30 days, how often do you get stoned?
   A. I don’t use marijuana
   B. Less than once a month
   C. Once or twice a month
   D. About once a week
   E. Several times a week

6. In your life, how often have you smoked marijuana (grass, pot)?
   A. I don’t smoke marijuana
   B. Occasionally
   C. Monthly
   D. Weekly
   E. Daily

7. Have you ever, even once, had a drink of any type of alcoholic beverage? Please do not include times when you only had a sip or two from a drink.
   A. YES
   B. NO

8. If you have ever used alcohol (beer, wine, hard liquor), how old were you when you first began?
   A. I don’t use alcohol
   B. Under 9
   C. 9-10
   D. 11-12
   E. 13-14
   F. 15-16
   G. 17-18
   H. Over 18

9. How long has it been since you last drank an alcoholic beverage?
   A. Within the past 30 days
   B. More than 30 days ago but within the past 12 months
   C. More than 12 months ago
   D. Never Used Alcohol

10. During the past 30 days, how often did you use alcohol (beer, wine, hard liquor)?
    A. I don’t use alcohol
    B. 1-5
    C. 6-9
    D. 10-19
    E. 20-30

11. If you drink alcohol, (beer, wine, hard liquor), how much do you drink at one time?
    A. I don’t drink alcohol
    B. One can, glass, drink
    C. Two cans, glasses, drinks
    D. Three cans, glasses, drinks
    E. Four cans, glasses, drinks
    F. Five cans, glasses, drinks
    G. Six or more cans, glasses, drinks

12. In the past 30 days, how often do you get drunk (buzzed)?
    A. I don’t use alcohol
    B. Less than once a month
    C. Once or twice a month
    D. About once a week
    E. Several times a week

13. In the past year, how often have you used alcohol (beer, wine, hard liquor)?
    A. I don’t use alcohol
    B. Occasionally
    C. Monthly
    D. Weekly
    E. Daily
14. How much do people risk harming themselves physically and in other ways when they smoke marijuana once a month?
   A. No risk
   B. Slight risk
   C. Moderate risk
   D. Great risk

15. How much do people risk harming themselves physically and in other ways when they smoke marijuana once or twice a week?
   A. No risk
   B. Slight risk
   C. Moderate risk
   D. Great risk

16. How difficult or easy would it be for you to get some marijuana, if you wanted some?
   A. Probably Impossible
   B. Very Difficult
   C. Fairly Difficult
   D. Fairly Easy
   E. Very Easy

17. How much do people risk harming themselves physically and in other ways when they have four or five drinks of an alcoholic beverage nearly every day?
   A. No risk
   B. Slight risk
   C. Moderate risk
   D. Great risk

18. How much do people risk harming themselves physically and in other ways when they have five or more drinks of an alcoholic beverage once or twice a week?
   A. No risk
   B. Slight risk
   C. Moderate risk
   D. Great risk

19. How much do people risk harming themselves physically and in other ways when they use prescription pain relievers once a month?
   A. No risk
   B. Slight risk
   C. Moderate risk
   D. Great risk

20. How much do people risk harming themselves physically and in other ways when they use prescription pain relievers once or twice a week?
   A. No risk
   B. Slight risk
   C. Moderate risk
   D. Great risk

21. Have you ever, even once, used another person’s prescription drugs (Darvocet, Darvon, Tylenol with codeine, Vicodin, Lortab, or Lorcet) that was not prescribed for you or that you took only for the experience or feeling it caused?
   A. YES
   B. NO

22. If you have ever used someone’s prescription drugs, how old were you when you first began?
   A. I don’t use other people’s prescription drugs
   B. Under 9
   C. 9-10
   D. 11-12
   E. 13-14
   F. 15-16
   G. 17-18
   H. Over 18

23. How long has it been since you last used any prescription pain reliever that was not prescribed for you or that you took only for the experience or feeling it caused?
   A. Within the past 30 days
   B. More than 30 days ago but within the past 12 months
   C. More than 12 months ago
   D. Never Used Pain Relievers

24. During the past 30 days, how often did you use another person’s prescription drugs?
   A. I don’t use alcohol
   B. 1-5
   C. 6-9
   D. 10-19
   E. 20-30

25. In the past year, how often have you used someone’s prescription drugs?
   A. I don’t use prescription drugs
   B. Occasionally
   C. Monthly
   D. Weekly
   E. Daily
26. Some parents decide to educate their children at home rather than send them to school. Have you been homeschooled at any time during the past 12 months?
   A. YES
   B. NO

27. Which of the statements below best describes how you felt overall about going to school during the past 12 months?
   A. You liked going to school a lot
   B. You kind of liked going to school
   C. You didn’t like going to school very much
   D. You hated going to school

28. During the past 12 months, how often did you feel that the school work you were assigned to do was meaningful and important?
   A. Always
   B. Sometimes
   C. Seldom
   D. Never

29. How important are the things you have learned in school during the past 12 months are going to be to you later in life?
   A. Very important
   B. Somewhat important
   C. Somewhat unimportant
   D. Very unimportant

30. During the past 12 months, how often did your teachers at school let you know when you were doing a good job with your school work?
   A. Always
   B. Sometimes
   C. Seldom
   D. Never

31. How many of the students in your grade at school would you say use prescription pain relievers as a drug?
   A. None of them
   B. A few of them
   C. Most of them
   D. All of them

32. How many of the students in your grade at school would you say use marijuana or hashish?
   A. None of them
   B. A few of them
   C. Most of them
   D. All of them

33. How many of the students in your grade at school would you say use prescription pain relievers as a drug?
   A. None of them
   B. A few of them
   C. Most of them
   D. All of them

34. During the past 30 days, how many times have you been in trouble with your parents (i.e. grounding, denied privileges)?
   A. Never
   B. Once
   C. Twice
   D. 3-5 times
   E. 6-9 times
   F. 10 or more times

35. During the past 30 days, how many times have you physically fought?
   A. Never
   B. Once
   C. Twice
   D. 3-5 times
   E. 6-9 times
   F. 10 or more times

36. During the past 30 days how many times have you been in trouble at school (i.e. visited the principal’s office, suspension)?
   A. Never
   B. Once
   C. Twice
   D. 3-5 times
   E. 6-9 times
   F. 10 or more times