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DISSERTATION

THE EFFECT OF SCHOOL TRANSITIONS ON RURAL SEVENTH AND NINTH GRADE STUDENTS' SUBSTANCE USE

Submitted by

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School of Education

In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

Summer 2002

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY BEVERLY S. MARQUART ENTITLED "THE EFFECT OF SCHOOL TRANSITIONS ON RURAL SEVENTH AND NINTH GRADE STUDENTS' SUBSTANCE USE" BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

Committee on Graduate Work

Advisor

Department Head

ABSTRACT OF DISSERTATION

THE EFFECT OF SCHOOL TRANSITIONS

ON RURAL SEVENTH AND NINTH GRADE STUDENTS'

SUBSTANCE USE

The purpose of this study was to determine the school transition factors associated with the potential for adolescent substance use. Specifically, this research investigated the relationship between the *type* of school transition (*early K-5* vs. *delayed K-6* and *one feeder* vs. *multiple feeders*) and the substance use of 9,650 seventh and ninth grade students surveyed from 1996-2000 in 29 rural communities across the United States using the Community Drug and Alcohol Survey.

The following dependent variables were examined: 1) substance use divided into three categories: a) alcohol b) marijuana c) inhalants. Independent variables were: 1) type of school transitions; 2) gender; 3) grade; 4) school adjustment divided into three measures: a) attitude toward school, b) attitude toward teachers, c) school performance; and 5) peer substance use climate divided into three measures: a) substance use of peers, b) peer encouragement to use substances, c) peer sanctions against substance use.

Because there was limited research on effects of school transitions, and virtually no empirical data on the effects of school transitions on school adjustment, peer substance use climate, or adolescent substance use, effects were first examined by using

MANOVA analyses. Hierarchical multiple regression analyses were used in the final step of the analysis to determine the effects of school transitions on substance use (alcohol, marijuana, and inhalants), first considering the independent effects of school transitions then with gender, school adjustment, and peer substance use climate variables being controlled.

Time of transition (*early* vs. *delayed*) results from MANOVA analyses showed non-significant effects in seventh grade emerging as significant effects in ninth grade. Seventh and ninth graders from multiple feeder schools reported stronger peer influences to use substances and higher marijuana use. Ninth graders from multiple feeder schools reported higher alcohol use. Hierarchical multiple regression results revealed that time of transition was statistically significant for ninth grade alcohol use and number of feeder schools had a statistically significant effect for seventh and ninth grade marijuana use, but these transitions accounted for only a very small portion of the variance (less than 1%) so should be interpreted with caution.

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Finally, a special thank you to my family for your understanding and patience. To my son Reid, my daughter Brittany and her husband Jason, I thank you for the love and devotion you give that makes this project and others worthwhile. And last,

but certainly not least, thanks to my husband Rick, my mother Betty, my sister Bonnie, and my brother-in-law John, who have always believed in me and who are my foundation.

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DEDICATION

This dissertation is dedicated to the memory of my father, Ervin Klundt, whose strength of character set an example of determination and integrity. It was his belief that I could achieve any goal and his encouragement and support have given me strength and confidence in my life.

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CHAPTER I: INTRODUCTION

The transition from elementary school to the middle grades (either a junior high school or a middle school) marks the end of childhood and the beginning of adolescence. Within a relatively short period, young adolescents experience profound changes in physical, intellectual, social, and emotional development. They experiment with new social roles, must deal with their rapidly changing bodies, and face new expectations from the world around them (Mitchell, 1979; Nielsen, 1987).

These dramatic and complex physiological, cognitive, social, and environmental life changes are either just beginning or will soon develop (Hirsch & Rapkin, 1987). Therefore, the years from ten through fourteen are a crucial turning point in an adolescent's life course (Smith, 1997). The most obvious turning points are physical changes that occur at puberty when the child's body begins to develop into that of a sexually mature adult (Tanner, 1999). Social changes are often manifested during adolescence as the child is given more adult-like freedoms and responsibilities and as society begins to modify its interaction with the adolescent (Adams & Gullotta, 1989). This period, then, represents an optimal time for interventions to promote effective education, prevent destructive behavior, and encourage enduring health practices.

During the past thirty years, researchers have worked to determine the origins and developmental pathways of adolescent physiological, cognitive, social, and environmental issues, especially substance use. Factors associated with the origin and

development of these pathways have been categorized into two groups. Factors associated with a greater potential for drug use are referred to as "risk" factors, and those factors associated with a reduced potential for drug use are called "protective" factors (Hawkins, Catalano & Miller, 1992). Risk factors represent a challenge to the psychological and social development and have differing impacts based on the individual's phase of development (Blos, 1979). Ineffective parenting or lack of nurturing as well as chaotic home environments form a critical foundation for risks. Other risk factors relate to the individual's interaction with family, school, peers and community (Swaim, 1991). In addition, common antecedents in previous childhood experiences compound many problem behaviors in adolescence. One is academic difficulty; another is the absence of strong and sustained guidance from adults (Hamburg & Takanishi, 1989).

Protective factors include strong bonds with family, school, religion, parental monitoring and involvement, success in school, and adoption of conventional norms regarding drug use (Beauvais & Oetting, 1999). Wills, Vaccaro and McNamara (1992) examined vulnerability and protective factors and found negative life events and negative affect (dysphoria, anxiety, irritation, anger, and stress) to be related to a higher level of substance use, and protective factors such as parent emotional support, academic competence, and positive affect (positive mood) were related to a lower level of substance use. The availability of drugs, trafficking patterns, and beliefs that drug use is generally tolerated also influence the individual's decision to initiate drug use (NIDA, 1997).

The primary question for this research is whether the change into a new type of organizational environment (different school) is more damaging for rural students if it coincides with other developmental aspects of the transition out of childhood into adolescence, and therefore, affects substance use involvement. Other research has established that it is the timing of life transitions during early adolescence that jeopardizes the adolescent's ability to adjust to life changes (Simmons, Burgeson, Carlton-Ford & Blyth, 1987).

Statement of Problem

The physical and emotional development of adolescents may vary greatly from one individual to another. However, an investigation as to whether or not life-changing transitions (a change of physical environment, like changing schools) during early adolescence jeopardizes an individual's ability to adjust and be protected from the use of substances is important to investigate. The types of transitions for this study are illustrated in Figure 1.

From data extracted from the 1989 National Educational Longitudinal Study, Eccles, Lord & Midgley (1991) reported students' outcomes (a self-report measure) to be better in K-8 schools than in the other three more typical middle grade school configurations (grades 6-8; grades 7-8; and grades 7-9). The shift or transition of students to middle grades and out of an elementary school is often associated with teachers having more students for a shorter period of time, small-group/individual instruction to whole class instruction and peer evaluation of work. These changes often associated with transition to middle grades may be especially harmful in that they

emphasize competition (larger groups), social comparison (peer evaluation), and ability grouping at a time of heightened self-focus and at a time when adolescents are most concerned with peer relationships. Additionally, adolescents are especially in need of special close adult relationships outside the home which is often lacking when students change schools (Alspaugh, 1998).

Alspaugh (1998), found a statistically significant achievement loss for students making the transition from one feeder elementary school to a single middle grade school as compared to K-8 schools that did not have a transition beginning at seventh grade. The loss in academic achievement was even greater for students who transitioned from multiple feeder elementary schools into a single middle school. And, the achievement loss was again greater for students transitioning from middle school to high school than for students transitioning from K-8 to high school. Additionally, the schools with two transitions had higher dropout rates than schools with only one transition.

In summary, it is the nature of the school environment as well as the type of transitions that are critical to the successful developmental adjustment of adolescents. And, it is believed by this researcher that school transitions may create an "environment" for risk behavior.

The search for common problems during school transition stimulated this researcher to examine 1) risks for rural students when they change schools during an already difficult developmental stage and 2) if changing schools is systemically necessary, then what is the best time to make that transition.

Research Hypotheses

Hypothesis 1a (refer to Figure 1): Rural seventh graders from *early* transition schools (K-5 elementary schools) will have significantly lower school adjustment (attitude toward school, attitude toward teachers, and school performance) than seventh graders at *delayed* transition schools (K-6 elementary schools).

Hypothesis 1b: Rural seventh graders from *early* transition schools (K-5 elementary schools) will have significantly more associations with substance using peers than seventh graders at *delayed* transition schools (K-6 elementary schools).

Hypothesis 1c: Rural seventh graders from *early* transition schools (K-5 elementary schools) will have significantly higher substance use than seventh graders at *delayed* transition schools (K-6 elementary schools).

Hypothesis 2a (refer to Figure 1): Rural ninth graders from *early* transition schools (K-5 elementary schools) will have significantly lower school adjustment (attitude toward school, attitude toward teachers, and school performance) than ninth graders at *delayed* transition schools (K-6 elementary schools).

Hypothesis 2b: Rural ninth graders from *early* transition schools (K-5 elementary schools) will have significantly more associations with substance using peers than ninth graders at *delayed* transition schools (K-6 elementary schools).

Hypothesis 2c: Rural ninth graders from *early* transition schools (K-5 elementary schools) will have significantly higher substance use than ninth graders at *delayed* transition schools (K-6 elementary schools).

Hypothesis 3a (refer to Figure 1): Rural seventh graders from *one feeder school transitions* will have significantly higher school adjustment (attitude toward school, attitude toward teachers, and school performance) than rural seventh graders from *multiple feeder school transitions.*

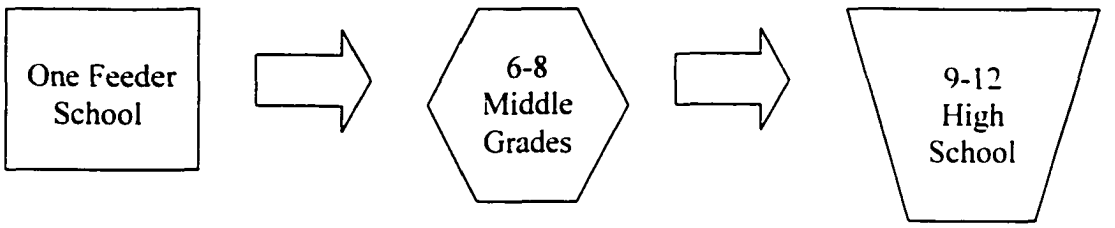
Hypothesis 3b: Rural seventh graders from *one feeder school transitions* will have significantly fewer associations with substance using peers than rural seventh graders from *multiple feeder school transitions.*

Hypothesis 3c: Rural seventh graders from *one feeder school transitions* will have significantly lower substance use, (alcohol, marijuana, and inhalants) than rural seventh graders from *multiple feeder school transitions.*

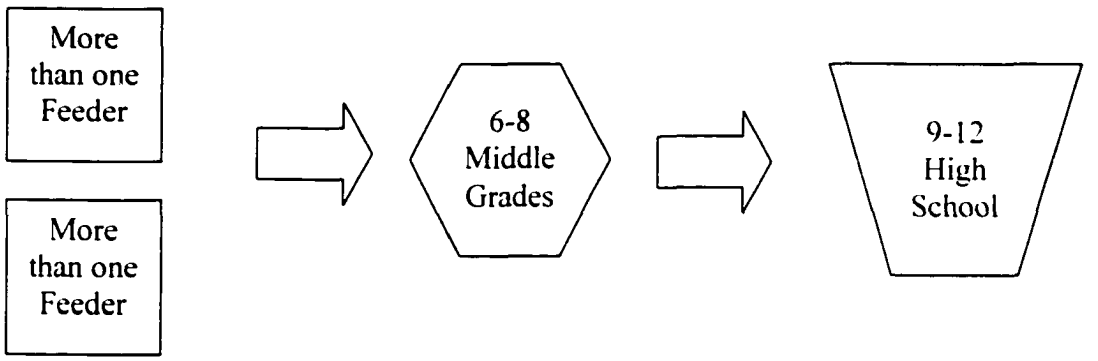
Hypothesis 4a (refer to Figure 1): Rural ninth graders from *one feeder school transitions* will have significantly higher school adjustment (attitude toward school, attitude toward teachers, and school performance) than rural ninth graders from *multiple feeder school transitions.*

Hypothesis 4b: Rural ninth graders from *one feeder school transitions* will have significantly fewer associations with substance using peers than rural ninth graders from *multiple feeder school transitions.*

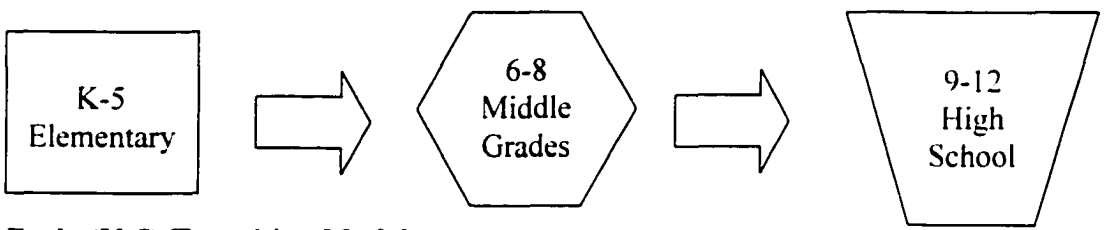
Hypothesis 4c: Rural ninth graders from *one feeder school transitions* will have significantly lower substance use, (alcohol, marijuana, and inhalants) than rural ninth graders from *multiple feeder school transitions.*



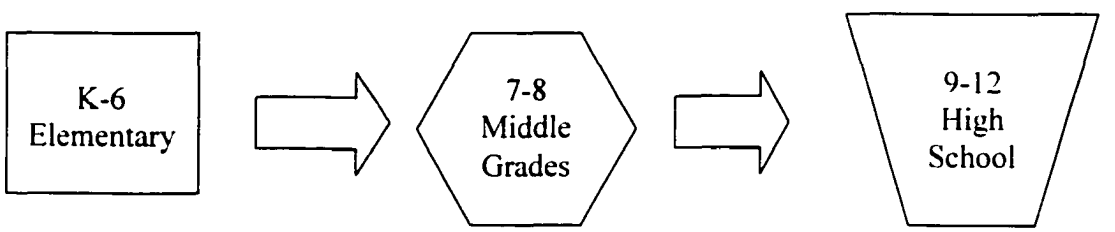
One Feeder School Transition Model



Multiple Feeder School Transition Model



Early (K-5) Transition Model



Delayed (K-6) Transition Model

Figure 1. School Transition Models

Ethnicity Research

Hypotheses regarding ethnicity differences are not addressed in this research because little or no empirical data exists on school transitions in minority schools related to these variables.

Purpose of the Study

The purpose of the study was to compare the effects of different types of school transitions (early vs. delayed and one feeder vs. multiple feeders) on rural seventh and ninth graders' substance use. The first type of transition that was considered was early (K-5) vs. delayed (K-6) to a middle school (including grades 6-8 or 7-8). The second type of transition that was considered was one feeder school vs. multiple feeder schools to a middle school (including grades 6-8 or 7-8).

The study also investigated the effects of types of school transitions (early vs. delayed and one feeder vs. multiple feeders) on rural seventh and ninth graders' school adjustment and peer substance use associations when transitioning to a middle school (including grades 6-8 or 7-8).

Definition of Terms

To provide clarity, the following terms have been defined for this study:

Ability grouping. The practice of scheduling students into environments where they are taught with students of similar abilities (Connors & Irvin, 1989).

Advisory programs. For this study, a signature practice where students receive an assigned advisor who is available to discuss issues (Connors & Irvin, 1989).

Cocaine. A white powder stimulant derived from the South American coca plant. It is usually "sniffed" or "snorted", but may also be dissolved and injected.

Common Planning Time. A practice that allows time for groups of teachers (usually in an interdisciplinary team) to coordinate and plan instruction across disciplines, address common problems, conduct parent conferences, and support each other in the education of students (Epstein & Mac Iver, 1990).

Cooperative learning. An instructional method in which students work in small, heterogeneous groups toward a common goal or assignment.

Delayed Transition. For this study, a type of movement from a school with grades Kindergarten through grade six to a new middle grade school (grades seven through eight).

Developmental readiness. The state of being prepared for a transition into a new developmental phase (Simmons & Blyth, 1987).

Developmental mismatch. The state of not being developmentally prepared for a transition period or transitioning at an inopportune time (Seidman, Allen, Aber, Mitchell, & Feinman, 1994).

Distal influences. Influences that are relatively indirect causes of a given behavior (Petraitis, Flay & Miller, 1995).

Downers. A slang term that includes nearly all (highly addictive) barbiturates, sedatives, and sleeping pills that relieve muscle spasms, block pain (to some extent), and lead to a sleepy, drowsy state.

Early adolescence. A period of development in which some of the most influential normative changes take place including the onset of puberty, the initiation of dating relationships, and [traditionally] the changing of schools (Hirsch & Rapkin, 1987).

Early Transition. For this study, a type of movement from a school with grades Kindergarten through grade five to a new middle grade school (grades six through eight).

Elementary school. A school serving students from kindergarten through grade five or kindergarten through grade six.

Exogenous factor. A condition that originates and/or develops outside of the individual and is generally outside of their control (Petraitis, Flay, & Miller, 1995)

Experimental substance use. The stage before an adolescent abuses or becomes dependent on tobacco, alcohol, or an illicit substance (i.e. marijuana) in which they are not committed to continued use and during which a substance has not yet become a regular part of their lives (Petraitis, Flay, & Miller, 1995).

Flexible block scheduling. Instruction scheduling is varied according to the needs of students and teachers on a team (Epstein & Mac Iver, 1990).

Focal model theory. Belief that gradual adjustment to one change before presentation with another change is more desirable for a less disruptive or traumatic transition (Coleman, 1974).

Gateway theory. An adolescent's drug involvement begins with alcohol, progresses to marijuana, and finally progresses to the third stage of "hard" drugs. A second stage seldom takes place before or by skipping over the first stage (Kandel, 1978).

Hallucinogens. A class of drugs also known as psychedelics that interferes with nerve impulses in the brain resulting in hallucinations.

High School. For this study, a school consisting of grades nine through twelve.

Inhalants. Solvent type substances (i.e. gasoline, glue, paint, paint thinner, etc.) that evaporate at room temperature wherein the fumes can be breathed through the nose ("sniffed") or breathed through the mouth ("huffed").

Interdisciplinary teams. Teachers who represent different academic disciplines and who share responsibility for teaching groups of students (Epstein & Mac Iver, 1990).

Junior high school. A school comprising grades seven through nine.

Middle school. For this study, a school comprising grades six through eight.

Middle grade schools. Schools configured to include grade seven and possibly one or two additional grades above and/or below (Epstein & Mac Iver, 1990).

Multiple feeder school transition. The type of movement into a new school based on the feeder pattern of the previous school. A transition involving more than one feeder school combining with a higher level school (Alspaugh, 1998).

Non-normative school transition. An "unscheduled" change for an adolescent that might be caused by geographic mobility (change of residence) or change in parental marriage status (Simmons, et al., 1987).

Normative school transition. A standard change that adolescents make as they complete grades at one level and move into a school for upper grades.

One feeder school transition. The type of movement into a new school based on the feeder pattern of the previous school. A transition involving one feeder school combining with a higher level school (Alspaugh, 1998).

Peer substance use climate. A composite factor consisting of three variables: peer sanctions to use substances, peer encouragement to use substances, and peer substance use.

Protective factors. Factors associated with a reduced potential for drug use. Protective factors include strong bonds with family, school, and religion; parental monitoring and involvement; success in school; and adoption of conventional norms regarding drug use (Hawkins, Catalano & Miller, 1992).

Proximal influences. Influences that focus only on the most immediate precursors to a particular behavior (Petraitis, Flay, & Miller, 1995).

Risk factors. Factors associated with a greater potential for drug use. Risk factors relate to the individual's interaction with family, school, peers, and community (Hawkins, Catalano & Miller, 1992).

Rurality. Community classification based on population size and proximity and accessibility to a metropolitan area (see Chapter 3, p. 50 for more detailed description).

School Adjustment. A composite factor consisting of three variables: attitude toward school, attitude toward teachers, and school performance.

Signature practices. Practices considered to be the best practices of programs for students in the middle grades. Some signature practices include: interdisciplinary teams, common planning time, flexible block scheduling, advisory programs, and cooperative learning (Connors & Irvin, 1989; Odegaard & Heath, 1992; Epstein & Mac Iver, 1990).

Social comparison. Assessing an individual's social standing in relation to others.

Stimulants. Laboratory produced amphetamine type drugs often referred to as "uppers" or "speed" causing alertness or excitement. Also included in this category are methamphetamines.

Transition. A process in which students' education is influenced by institutional and social factors because of the movement from one condition, level or stage to another (Schiller, 1999).

Temperament. Characteristics that appear during early development, show reasonable stability over time, and have a constitutional basis (Wills, DuHamel & Vaccaro, 1995).

Transitional discomfort. A period of distress that occurs when change comes too suddenly, too early, or if change occurs in too many areas at one time (Coleman, 1974; Simmons, et al., 1987).

Ultimate influences. Broad influences that gradually direct individuals toward a behavior beyond the control of the individual and more deeply rooted in their environment, personality, or biological make-up (Petraitis, Flay, & Miller, 1995).

Uppers. Slang term for stimulants.

Zone of comfort. For this study, a reasonably safe environment that provides opportunities for emotional and intellectual growth during transition phases (Coleman, 1974; Simmons, et al., 1987; Eccles, Lord & Midgley, 1991).

Delimitations

The scope of this study includes those rural schools that were public and not privately funded. Since the project granting institution was a Federal institute within the National Institutes of Health, private institutions were not accessed under federal guidelines. Public schools were recruited for participation based on size (remote and rural) and proximity to a large metropolitan area classification system (see Methodology, Chapter Three for detailed description). Empirical classifications were made following these guidelines: remote was defined as an area with a population less than 2,000 and located more than 2 hours travel time from a metropolitan area. Rural was defined as an area with a population between 2,000 and 20,000, *or* a population less than 2,000 and located less than 2 hours travel time from a metropolitan area. Subjective evaluations were based on further interview feedback from community members that addressed actual accessibility to metropolitan areas and services.

Schools surveyed with less than 75 percent (overall participation) of enrolled students (accounting for absenteeism and students involved in outside school activities) taking the survey, schools where honesty questions suggested evidence of poor survey administration, or schools where there were large numbers of invalid surveys were not analyzed. Two survey questions asked students whether they were honest. If more than 10% of respondents from an individual school indicated they were not honest it may have been a sign that students in that particular location did not perceive that the survey conditions provided anonymity, and the surveys from that school were not included in the sample.

Limitations

Survey methodologies (self-report measures) have inherent limitations. Some adolescents may exaggerate substance use. However, safeguards were utilized that assessed the extent of exaggeration (or over reporting) by listing a fictitious drug among other drugs to determine the number of students who claimed to have used it. When taking surveys, adolescents can also be inconsistent, marking whimsically, at random, or inaccurately because of poor reading skills (refer to Chapter Three, Data Cleaning).

Because the survey used for this study was an anonymous instrument, it was impossible to track the effect of students' transitions when they may have come from a different school district system. This situation presents a possible threat to the reliability of the data in this study. However, according to research literature, it should be noted that students who have made non-normative transitions (moving from another school or district) may be at as much or more risk for drug use and poor school adjustment (Simmons, et al., 1987).

Since surveys in this study were administered to adolescents who were in school, the population of dropouts was not included. However, the sample population was seventh and ninth grade students who were transitioning within school systems and should not, by nature, include students who were not in school.

Need for the Study

Given the complex influences on adolescents in today's society, the essential requirements for ensuring healthy development must be met through the joint efforts of a set of pivotal institutions that shape adolescents' experiences during this crucial period.

These pivotal institutions must begin with the family and include schools, health care institutions, a variety of neighborhood and community organizations, and the media (Carnegie, 1989). Public policy initiatives in our neighborhoods, schools, jobs, and communities shape the contexts in which families live and human development takes place. National research centers influence policy and often stand as institutionalized resources for educators, practitioners, policymakers, and specialists interested in providing information and policy development for at-risk students, family well being and community-building coalitions (Malen, 1995). Network and policy entrepreneurs (think tanks) as well as financed (organized) interest groups also form political coalitions that shape policy and policy debate.

In 1989 a landmark policy report, *Turning Points: Preparing American Youth for the 21st Century* was released by the Council on Adolescent Development of the Carnegie Corporation of New York. *Turning Points* (1989) was critical of the state of many middle grade schools across the United States. The Council declared that a "volatile mismatch exists between the organization and curriculum of middle grade schools and the intellectual needs of young adolescents." The Council associated this mismatch to a decline in young adolescents' interest in school and increases in absenteeism, dropout rates, and the number of students involved in substance use. The Carnegie Council has continued to urge essential institutions and policy makers to meet the demands of a technologically advanced, democratic society in ways that fully meet the requirements for healthy adolescent development. These institutions must now be strengthened in their vital roles and linked in a mutually reinforcing system of developmental and social support for middle school adolescents.

As stated in the National Middle School Association's publication (1995), *This We Believe: Developmentally Responsive Middle Schools*, the importance of achieving developmentally responsive middle level schools cannot be overemphasized as a critical societal institution. It is especially important to remember that the middle school concept cannot be communicated adequately by simply listing its characteristics. The middle school ideal is an entity, as much a philosophy of education as a composite of educational programs. Its successful operation is as dependent upon teachers' attitudes and approaches as upon their technical skills and knowledge. It is this strong philosophical foundation, and not just the more commonly cited organizational and programmatic characteristics, that has enlisted the commitment of teachers and made it possible for middle level education to become one of the longest running, most extensive educational reform movements in the United States. However, the United States is a large, heterogeneous, multiethnic nation with a strong tradition of individualism (Garreaus, 1992) and it is often difficult for Americans to arrive at a shared understanding of complicated social problems and turn that understanding into solutions that can win broad acceptance (NMSA, 1995). Achieving a consensus on the values and behaviors appropriate for middle grade adolescents from our diverse country are not always easy, but the attempt needs to be made to understand the issues and create developmentally responsible middle grade environments.

Even though the demographics of the U.S. are diverse, the population distribution of the United States is less varied. Currently, the typical American lives in an urban or suburban environment. In 1880 only one fourth of all Americans lived in cities. By 1990 that percentage reversed itself with only a quarter of all Americans living in rural areas

(U.S. Census, 1993). Therefore, our perceptions of rural America are often bound to the lore and lure of rural life. The lore involves stories handed down from one generation to the next, many rooted in a cultural view of America which involves the pioneer spirit, living off the land, the fruits of hard work and respect for the power of nature. The lure is, of course, the peace and scenic wonder of a region less developed (Fuller, 1982). This lore and lure have created some myths about what is going on in rural areas. The perceptions of rural communities where peace and calm protects residents from the problems that occur in large and more "metropolitan" populations have been shattered. As witnessed by recent headlines, rural communities are not immune from the violence and social issues of their urban counterparts.

Contrary to the stereotypical perception that life in rural America is somehow less vulnerable to the social problems that permeate the rest of society, substance use is as great a problem in rural communities as it is in metropolitan areas (Edwards, 1995). In the past, there was probably a substantial difference between rural and urban communities in terms of substance use. However, over the past few decades, these differences have gradually been eroded to the point where rural and urban youth are essentially at the same risk for drug involvement (Edwards, 1995). These findings may seem to differ from the common perception that urban youth are more heavily involved with drugs. However, this perception is undoubtedly a product of extensive media exposure about drug use in metropolitan barrios or ghettos. It is not accurate for cities as a whole. In any city there may be economically depressed areas with high criminality and drug use, but there are other areas with low drug use, and the average across a whole city is likely to match that of a smaller urban community (Peters, Oetting, Edwards &

Beauvais, 1992). With this information, it is imperative that studies be conducted to examine the realities of drug use in rural regions of the country.

Significance of the Study

Concern for the problem of adolescent drug use continues to be an issue meriting national attention for all segments and regions of our county. As a testament to this national concern, the U.S. Department of Health and Human Services (DHHS) has worked for more than two decades to establish target health objectives currently known as *Healthy People 2010*. These objectives embrace the notion that monitoring the nation's health is an important component of improving the nation's health and promulgating positive changes in health status. The general goal is to reduce preventable deaths and injuries for various age groups. However, the specific goal for adolescents involves disease prevention and risk reduction through behavioral change and the consequent positive health outcomes (DHHS, 1998).

It is within this framework of monitoring health issues and promulgating positive health outcomes that the behavioral changes necessary for adolescent substance use prevention must be examined. In addition to individual behavioral changes, it is also necessary to identify the mismatch of school organization structures and the curriculums of middle grade schools with the intellectual and emotional needs of young adolescents. Other research has often linked this mismatch to a decline in adolescents' interest in school and the increases in absenteeism. It is, therefore, proposed that the findings of this study have the potential to also link substance use to this mismatch, and to the problems associated with required transitions from elementary school to middle grade schools.

CHAPTER II: REVIEW OF LITERATURE

A review of literature for this study included five categories: background on adolescent transition, background on historical development of middle grade schools, the trends involved in the changing structures of middle grade schools, origins and pathways of drug use, and the perceptions of drug use in rural America.

The method for locating information involved reviewing various databases including SAGE, PsychLit, ERIC, ISI (Science Citation Index), and Social Sciences Index. Descriptors for literature search were comprised of the following key terms: school transition, middle school, substance use, rural, adolescent development, and peers.

Adolescent Transition

According to Coleman's (1974) theory of focal change, it is easier if an adolescent goes through various life changes at different times (gradual) rather than simultaneously. The focal model argues that gradual adjustment to one change before confrontation with another change is desirable for less traumatic transitions. It follows from this line of reasoning that it would be difficult for an adolescent to make the transition into a new school (middle grade school) at the same time he or she is experiencing other normative changes and/or other "unscheduled" non-normative changes.

Among the most influential normative changes in early adolescence is the onset of puberty, the initiation of dating relationships and changing schools. Non-normative changes that might be expected to have considerable effect on adolescents include geographic mobility (change of residence) and change in parental marriage status. Even though non-normative (i.e., geographic mobility or change in parental marital status) changes effect a smaller number of adolescents, the adjustment to change is exacerbated (Simmons, et al., 1987).

An adolescent's ability to cope or organize defenses to deal with life events are based on his or her ability to appraise "threats" and "dangers" and to select appropriate courses of action. Such ability is refined over a lifetime and may be especially difficult for the young person who lacks experience in dealing with change. When major life changes occur concurrently (or at least within a relatively short period of time), the individual's ability to cope is substantially reduced if the changes do not occur over time (Simmons, et al. 1987). Young adolescents, then, would be more vulnerable due to high stress from the physical, cognitive, and social-emotional changes they experience (Coleman, 1974; Simmons, et al., 1987). It is at this critical time that many school systems subject young adolescents to a change from elementary school to the middle grades. Theoretically, such change is a potential stressor as the adolescent is moved from one environment to another.

Making the transition to a new school is considered one of the major sources of stress for an adolescent. Adolescents at this transition point suffer loss on at least two fronts. First, the network of support from adults in the elementary school, which may have been cultivated over a period of six or seven years, is suddenly gone. In the

elementary school, these students were the "top dogs" -- the oldest, largest, most powerful and had the most status. With moving to the middle grades, these same students are the youngest, smallest, the least powerful and are afforded the lowest status (Santrock, 1996). At the same time, this move introduces this youngest, smallest and least powerful student to an influential group of older students who may be drug involved. Secondly, because it is likely that there will be an increase in the enrollment size of the grade level (primarily in the multiple feeder transition) after the transition, friendship networks are also disrupted. Because of this transition, new relationships must be built simultaneously with both peers and adults by the adolescent (Santrock, 1996; Alspaugh, 1998; Irvin, 1997). Thus, adolescents are required to adjust to dramatic increases in school disciplinary specialization, new rules, new academic performance criteria, new regulations, and the increased number of teachers and other school personnel (Seidman, et al., 1994).

For some, this period of early adolescence marks the beginning of a downward spiral leading to academic failure and school dropout. Although these changes are not as extreme for most students, there is sufficient evidence of gradual decline in various indicators of academic motivation, behavior and self-perception during the early adolescent years to make one wonder what is happening. A variety of explanations have been offered for these negative changes. Some have suggested that declines such as these result from the intrapsychic upheaval assumed to be associated with young adolescent development (Blos, 1979). Others have suggested that it is the coincidence of the timing of multiple life changes (Simmons & Blyth, 1987). Still others have suggested that it is the nature of the junior high school environment itself rather than the actual transition

that is important (Irvin, 1997). Not surprisingly, comprehensive theories have been developed to examine this specific phenomenon.

According to person-environment fit theory, behavior, motivation, and mental health are influenced by the fit between the characteristics individuals bring to their social environments and the characteristics of these social environments that do not fit their psychological needs (Irvin, 1997). Person-environment fit theory explains how stress results from a mismatch between an individual's abilities, needs, motives, goals, and behavior patterns, and the environment of demands, resources, opportunities, and rewards (Chemers, Hays, Rhodewalt & Wysocki, 1985). An individual experiences stress due to the disagreement or mismatch between their *abilities* and the demands of the environment and the mismatch of the individual's *needs* and the requirements of the environment (Chemers, et al., 1985).

Stressful experiences and efforts to cope with stress are also important to understanding adolescent problem behaviors (Compas, Orosan & Grant, 1993). There is evidence (Jessor & Jessor, 1977; Wills, Vaccaro & McNamara, 1992) that social support from family relationships may provide a stress-buffering effect and that supportive relationships with parents enable adolescents to cope better with typical life challenges. Family support may help build attitudes and beliefs that makes an adolescent more resistant to temptation of pressure for deviant behavior (Jessor & Jessor, 1977) and may encourage more adaptive and persistent coping skills (Wills, Vaccaro & McNamara, 1992).

Life stress also leads to decreases in perceived control and feelings of helplessness, which can render the adolescent more vulnerable to a variety of pressures,

including substance use. Emotional distress may be a response to low competence in normative roles and this low competence in normative relationships may lead the adolescent to seek support in deviant peer groups. It has been suggested that substance use in this context may help the adolescent feel better, at least temporarily, by reducing the focus on themselves and providing a self-indulgent distraction for poor performance in academic areas (Wills, Vaccaro & McNamara, 1992).

Research has also linked individual temperament to the potential for development of problem behaviors such as adolescent substance use (Wills, DuHamel & Vaccaro, 1995). It has been found by Wills et al. (1995), that temperament characteristics can make adolescents differentially susceptible to the impact of experiences and hence more likely to develop problem behaviors through the interaction of their temperament with their environment. Difficult temperament, poor self-control, deviance-prone attitudes (including risk taking), and life stress are related to adolescent substance use and subsequent increases in adolescent substance use (Wills & Cleary, 1999; Wills, Sandy, Yaeger, Cleary & Shinar, 2001).

The question of whether temperament represents a process whereby adolescents select different types of peers or whether an adolescent is more vulnerable to influences of deviant peer behavior because of temperament is not totally understood. Both types of processes may be operative: dispositional characteristics (temperament) can shape decisions an adolescent makes so that some individuals inhabit a social world with substantially different types of peers. At the same time, temperament characteristics can make some individuals more susceptible to the impact of both parental behavior and peer behavior (Wills, et al., 2001).

The list of documented impacts and stressors from classroom, school and personal environments on the individual adolescent is extensive. Therefore, the point for this study is that there may be systematic differences between the academic environments in "typical" elementary schools and of those in "typical" middle grade schools. In other words, the problems seen during early adolescence may be a consequence of the type of change in the school environment rather than characteristics of the developmental period stage per se (Irvin, 1997). There is a need to develop a sense of what is "normal" and/or different about a specific school as compared to other educational settings when studying schools. The idea of a "mismatch" between school environment and adolescent needs has evolved (Seidman, et al., 1994). At the most basic level, this perspective suggests the importance of looking at the fit between the needs of young adolescents and the opportunities afforded them in their middle grade school environment (Irvin, 1997).

Simmons & Blyth (1987) argued that young adolescents need a reasonably safe, as well as an intellectually challenging environment to adapt to these shifts – an environment that provides a "zone of comfort" as well as challenging new opportunities for growth. In light of those needs, the environmental changes often associated with transition to middle grade schools are likely to be particularly damaging in that these changes emphasize competition, social comparison and ability self-assessment at a time of heightened self-focus. These environmental changes potentially decrease decision making and choices at a time when the adolescents' desire for control is growing; emphasize lower level cognitive strategies at a time when the ability to use higher level strategies is increasing; and disrupt social networks at a time when adolescents are

especially concerned about peer relationships and may be in special need of close adult relationships outside the home (Irvin, 1997).

The developmental mismatch theory continues to be the most compelling explanation for the effects of the transition to middle grades. Developmentally, early adolescence is an inopportune time to leave the familiarity of one's school peers for a new group of peers, many of whom are older and who are perceived as having more antisocial values. It is equally inopportune to leave the confines of a single, supportive teacher who knows each child's academic and social strengths for an environment characterized by brief contact with numerous teachers. This mismatch is particularly troubling because it comes at a time when youth are trying to develop an identity beyond their family and being pulled in other directions by peers (Seidman, et al., 1994).

In summary, the literature presented supports the belief that there are negative consequences for adolescents who must cope with multiple transitions and stressors simultaneously. Therefore, there may be a point at which the concurrence of adolescent life transitions may become too difficult for successful coping. Important to the understanding of successful coping is the focal theory of change (Coleman, 1974) and a "developmental readiness" model – the theory that outlines the readiness for transition into a new phase that comes too early for some individuals (Simmons & Blyth, 1987).

If change comes too suddenly or if change is too early, given the adolescents' cognitive and emotional states, or if change occurs in too many areas at once, then the adolescent may experience "transitional discomfort" (Coleman, 1974). If an adolescent has an area of comfort in some environments, life domains, and role relationships, then it is hypothesized that discomfort in other areas should be more accepted and mastered.

There needs to be some domain or some set of relationships with which the adolescent can feel comfortable, or to which he or she can withdraw and become reinvigorated. Discontinuities in one domain of the adolescents' life should be easier to deal with if one still has "areas of comfort" in other "safe" life spheres in which to seek sanctuary. It is the belief of this researcher that it is at this point when the adolescent is most vulnerable that additional stressors often trigger risky "escapism" behaviors like drug use. Further research could investigate resources, attributes, and strategies that intensify and/or modify adjustment to multiple transitions for adolescents.

Historical Development of Middle Grade Schools

Around the turn of the twentieth century, the first seeds of the middle-grade schools were planted by the Committee on Economy of Time in Education. The committee recommended that the 8-4 organization (eight years in elementary grades and four years in high school) be reorganized into a 6-6 plan. The committee further suggested that the second six years might then be divided into two 3-year periods. The result was that, over the next few decades, the first of these 3-year schools would evolve into the junior high school (Muth & Alvermann, 1992). Subsequently, junior high schools became high schools with the name "junior" in front of it. By 1960, approximately four out of five high school graduates had gone through an elementary-junior-senior high school configuration (Muth & Alvermann, 1992). Alexander & George (1981) described the dissatisfaction many educators felt during the 1960s with the junior high model. Junior highs, at that time, were even defined as "wastelands" and "cesspools" by leading educators (Silberman, 1970). It was believed that the junior high

school model did not meet the developmental needs of its students (Alexander & George, 1981). Therefore, the resulting "middle school movement" grew in popularity through the 1970s and 1980s. The goals of the middle school movement suggested that schools for young adolescents be restructured so that they were more student-focused than their subject-centered junior high school counterparts (Toepfer, 1997).

The current K-12 reform movement began in 1983 with a federal panel, the National Commission on Excellence in Education, as it issued its report, *A Nation at Risk*. This report warned that U.S. students as a whole were at risk of developing lower skill levels than their cohorts (and future trade competitors) in other countries (National Commission on Excellence in Education [NCEE], 1983).

By 1989, the Carnegie Council on Adolescent Development was able to draw on a substantial amount of research to produce *Turning Points: Preparing American Youth for the 21st Century*. This influential document challenged educators to make use of past and current knowledge to create developmentally responsive schools for young adolescents. Although many practitioners recognized the problems facing young adolescents entering middle-grade schools, it was the Carnegie Council that cited the mismatch between intellectual, emotional and interpersonal needs of young adolescents and the organization and curriculum of these schools. The Council argued that this mismatch contributed to problems for adolescents because of the inability of students to form stable peer groups and find supportive relationships with caring adults. Resulting behavior included substance use, feelings of alienation and absenteeism (Carnegie, 1989).

Since 1989, the Carnegie Council's publication, *Turning Points*, has been the catalyst for development of both the components and blueprints for designing and

implementing genuine middle schools throughout the United States. Many schools have developed and implemented a variety of programs, policies and practices that focus on creating authentic middle school environments.

Trends: Changing Structures of Middle Grade Schools

A bona fide middle school is not merely an organizational structure consisting of a specific grade level configuration, set of components, and a name that includes the word "middle". It is, or theoretically should be, an organizational structure consisting of developmentally appropriate programs, policies, and practices tailored to maximize young adolescents' learning while maintaining a nurturing environment (Irvin, 1997).

Research has indicated that many young adolescents' problems begin at the transition period from elementary to middle grade schools (Simmons & Blyth, 1987). However, there has been a concerted effort on the part of many educators to create a more developmentally responsive middle school environment (Ames & Miller, 1994). The question to be examined is what is best practice for middle grade programs and which of those programs sustain their development? Signature practices have been identified to include interdisciplinary teams of teachers with common planning time, cooperative learning opportunities, advisory programs (homerooms), and exploratory programs (Connors & Irvin, 1989; Odegaard & Heath, 1992; Epstein & Mac Iver, 1990; Muth & Alvermann, 1992). And, as in many other environments, there is strength in partnerships, coalitions and teams that work together to provide services (Epstein, 1991). The presence of a team that assists in the formation, support and implementation of policies and practices creates a stronger transition for those being served (Simmons, et

al., 1987). These signature practices generally parallel the recommendations of the Carnegie Council on Adolescent Development (1989) that also suggested middle grade schools should work to create smaller, more personal communities of learners (teams) in which teachers and students would have a greater opportunity to know each other and organize the curriculum to promote the integration of subject matter (Carnegie, 1989).

Unfortunately, public policy often operates on a deficit model regarding social and educational issues instead of from a model of signature practices. The deficit model suggests that it is the individual child – his or her family, background, or ethnic group that is deficient instead of the circumstances or systems that produce the problem. It is the "blaming the victim" rationale. Alternative strategies for educational policy reform call for changing the conditions under which students attend school. In assessing the legislation/policies that are needed, it is important to avoid looking at the issues surrounding students from a "deficit model" perspective (Waxman, Felix, Anderson, & Baptiste, 1992).

In recent years, there have been a large number of school-based models that have been developed and implemented specifically for at-risk students in school environments. Some of these programs are designed, modified and implemented based on research findings while others are based on theoretical/conceptual models that are implemented and sometimes evaluated after the fact. Further, some programs are "funding programs" because they specify which students within the "at-risk population" are to be served rather than how those students are to be served (Waxman, et al., 1992). Two research questions are almost always asked about these school-based programs: do they obtain the desired effects, and are they a fair allocation of resources?

Recent research based on studies and applied reviews of legislation found that programs that achieved the largest gains for students were those that involved continuous progress reports, cooperative learning principles, preventative and remedial tutoring, and some form of computer assisted instruction (U.S. Department of Education, 1990). Within exemplary models, nine organizational/leadership themes were discovered. Exemplary programs were found to exhibit the following characteristics: an awareness that every student could learn; instructional leadership; highly qualified, experienced teachers; an emphasis on professional development; teacher accountability for student learning; coordination between programs and classroom teachers; monitoring of program success and instructional feedback; discontinuance of ineffective methods, materials and staff; sufficient time/attention for program delivery, scheduling and assistance; and parent involvement (Stringfield, 1994). The six instructional/classroom practices that were common to exemplary programs included: instruction geared to improving academic skills of individual students; integrating diagnosis, prescription planning, instruction and evaluation; lessons structured to provide success and challenge; frequent use of praise and rewards; frequent coordination of program guidelines; and the use of nationally recognized approaches to instruction (Epstein & Salinas, 1990).

It is clear that these research findings outlining proposals for successful programs are components and not "recipes" for improving learning environments for students. No program, even though it may be ideally implemented, will prove a panacea for all educational problems for all students. Furthermore, we must also address the critical out-of-school factors that affect the school environment. If we focus only on school factors

and ignore the importance of family and community conditions, we will miss the important and very strong influences on the education of all students.

Since it seems apparent that we need new "ways of doing" things that can adapt to a constantly changing educational environment, what are some of the politics that will likely be enlisted to implement these new directives? First of all, interest in the political forces within education policy is fairly recent. Research about the psychological and sociological aspects of education have historically been the stronger tradition, but this is changing (Mitchell, 1989). Why was the political force in education slow in developing? Mostly, it comes from the age-old view that we need to keep politics out of education and get the schools out of politics. However, with Brown vs. Board of Education, the *Race for Space* in the fields of math and science in the 1960's, the New York City Teachers Strike and greater intervention by courts into day-to-day operations of schools, local districts that once held very powerful political positions have bowed to a new force in the political structure (Mitchell, Boyd, Cooper, Malen & Marshall, 1994) - educational environment.

Origins and Pathways of Substance Use

For the last three decades, social scientists have tried to understand why some adolescents use drugs and others do not. Hawkins, Catalano and Miller (1992) concluded the factors that contribute to experimental substance use include:

> laws and norms favorable toward drug use; availability of drugs; extreme economic deprivation; neighborhood disorganization; certain psychological characteristics; early and persistent behavior problems including aggressive behavior in males; other conduct problems, and hyperactivity in childhood and adolescence; a family history of alcoholism and parental use of illegal drugs; poor family management practices; family conflict; low bonding to family; academic

failure; lack of commitment to school; early peer rejection; social influences to use drugs; alienation and rebelliousness; attitudes favorable to drug use; and early initiation of drug use.

Even though social scientists may be aware of many (if not most) of the factors that contribute to substance use, there is still much to be determined regarding how all of these factors fit together and what can be done to prevent adolescent substance use (Petraitis, Flay, & Miller, 1995). In the past, theories of substance use generally stood in isolation from one another and were rarely taken together. According to Oetting & Beauvais' (1987a) review of the literature, substance use theories can be divided into seven types of theories: disease-addiction, gateway, social, psychological, political, psychosocial, and life-style. Each of these seven theoretical approaches to substance use offers important pieces to understanding the predictors of substance use while emphasizing a select set of characteristics that attempt to explain how and why these factors contribute to use of substances. Therefore, no one theory offers a comprehensive etiological overview (Oetting & Beauvais, 1987a).

Petraitis, Flay and Miller (1995) further reviewed the predictors of adolescent substance use and framed the structure of current experimental substance use theories into general areas of cognitive (decision making) and social learning (role models), weakened commitment (withdrawal) to conventional values, weakened attachment (detachment) to family, intrapersonal influences, and individual personality traits. Three landmark theories that integrate cognitive-affective, learning, commitment and attachment, and intrapersonal constructs are highlighted by Petraitis, Flay and Miller (1995): Jessor's problem-behavior theory (Donovan, Jessor & Costa, 1991; Jessor,

Graves, Hanson & Jessor, 1968; Jessor & Jessor, 1977); Peer cluster theory (Oetting & Beauvais, 1987a,b); and Sher's model of vulnerability (Sher, 1991).

According to problem-behavior theory, susceptibility to problem behaviors results from the interaction of the person and environment and contends that adolescents are at risk if they are unattached to their parents, are close to their peers, and are more influenced by their peers than their parents. In addition, adolescents are at increased risk if they have friends who use substances or if they believe their friends and parents approve of experimental substance use (Jessor, et al., 1991).

Research has also suggested that adolescent substance use results from multiple factors including peer modeling and social influence, deficits in parental socialization, lack of control and support, parental modeling and tolerance of use, and attempts to cope with stress-induced negative affect (Chassin, 1984). Negative affect (dysphoria, anxiety, irritation, anger, and stress) and impaired parental monitoring are also associated with an adolescent's membership in a peer network that supports drug use and behavior (Chassin, Pillow, Curran, Molina & Barrera, 1993).

As leaders in peer network research, Oetting and Beauvais (1987a,b) developed peer cluster theory as a system to incorporate those psychosocial factors that create a potential for drug involvement or inoculate an adolescent against drug use. Peer clusters were defined as *small subsets* of peer groups, including pairs (such as best friends), boyfriend-girlfriend, and larger groups of similar-aged youth who spend their leisure time together and have a great deal of influence on one another (Edwards, 1995). The peer cluster shares beliefs, values, and behaviors that determine when, where, and with whom drugs are used and the role drugs play in defining peer cluster membership. Specifically,

peer clusters are small groups in which drugs are made available; an adolescent learns to use drugs, shares beliefs, attitudes, values and rationales regarding drug use; and where drug use plays an important role in group membership and identification (Oetting & Beauvais, 1987a,b).

Although peer cluster theory emphasizes the crucial role played by peer clusters, it does not negate the importance of other psychosocial factors that underlie peer clusters and create a potential for substance use. Early conditions that lead to generally deviant attitudes, values, and behaviors can create a high potential for drug involvement (Oetting & Beauvais, 1987a,b). Socialization characteristics are highly predictive of adolescent substance use (Oetting & Beauvais, 1987b). Table 1 shows that each of the five socialization variables (peer drug associations, school adjustment, family sanctions, religious identification, and family strength) is correlated significantly with drug involvement. However, peer drug associations dominate the relationship with drug use despite the fact that each of the other variables relate to drug use independently of each other (Oetting & Beauvais, 1987b).

Table 1

Intercorrelation Coefficients for Drug Use and Socialization Characteristics

	1	2	3	4	5
Anglo adolescents (White Non-Hispanic)					
1. Drug Use					
2. Peer drug associations	.74				
3. School adjustment	-.40	-.45			

Note. Oetting and Beauvais, 1987b.

Therefore, the important element of causation for adolescent substance use is the circularity of cause and effect -- a social or personal condition stimulates drug use,

experimenting with drugs causes changes in social and personal conditions, these factors lead to further support of drug use, and the cycle goes around and around (Oetting & Beauvais, 1987a).

From these studies by Oetting and Beauvais (1987a), it is suggested that parental influences do not directly affect an adolescent's decision to use drugs. Rather, family factors are more likely to impact the development of their children's peer relationships that, in turn, directly influence drug behavior. Socialization links to the family play a key role in providing strong sanctions against drug use. Young people who see the family as caring and as providing strong sanctions against drugs are more likely to identify with peer groups with strong sanctions against drugs. They are also more likely to do better in school, and young people with good school adjustment are less likely to associate with peers who strongly encourage drug use. The most powerful and direct socialization influence on drug use, however, is peers. When considering all socialization characteristics, 95 percent of the predictable variance in drug use can be accounted for by the influence of peers (Oetting & Beauvais, 1987a). Additionally, the social development model posits that the relative influence that families, schools, and peers apply over an adolescent's behavior shifts developmentally with parents dominating preschool years, teachers dominating preadolescent years, and peers dominating behaviors during adolescence (Petraitis, Flay, & Miller, 1995).

Sher's model of vulnerability suggests that experimental substance use factors such as substance-specific expectations, parental substance use, school failure, emotional distress, and inadequate coping skills all have biological origins found in personality, cognitive functioning, and the individual differences in pharmacological sensitivity to

substances (Sher, 1991). It is the origin of these mediating (and other) factors that makes Sher's (1991) model so important and so different from previous theories (Petraitis, Flay, & Miller, p.78).

The previously described theories comprise a long and diverse list of constructs that theoretically contribute to substance use. The diversity of theories and causes of substance use is a complex behavior with many avenues for analyses. Petraitis, Flay and Miller (1995) believe that the causes of substance use can be categorized into two dimensions: types of influence and levels of influence. Types of influences fall under three distinct domains: social or normative (attachments to others), cultural or attitudinal (personal values), and intrapersonal influences (personality traits). Levels of influence are divided into proximal, distal, and ultimate levels of influence.

According to Petraitis, Flay and Miller (1995), many of the characteristics of social influences are related to adolescents' attachment to role models and their motivation to comply with substance-specific values of those role models. Cultural and attitudinal influences may be rooted in specific environments. And, intrapersonal influences concern adolescents' dispositions and affective states (temperament), general behavior skills, cognitive functions, and emotional stressors (i.e. anxiety, depression).

Proximal influences (intentions and decisions) on drug use is highly predictive but focus only on the most immediate precursors to that behavior and do little to explain the long-term roots of behavior. Distal (background) influences are relatively indirect causes of a given behavior, but may help to explain the intermediate causes of drug use. Finally, ultimate influences are broad and exogenous factors that gradually direct individuals toward a behavior. Ultimate influences are beyond the control of the adolescent and

more deeply rooted in their environment, personality, or biological make-up (Petraitis, Flay, & Miller, 1995).

As evidenced by these previously discussed theories on the origins and pathways of experimental substance use, there is no shortage of constructs and theories surrounding them. However, most theories have predominately stood alone without meshing the pieces together. For example, interpersonal theories show how adolescents become involved with deviant peers; social learning theories show how involvement with deviant peers affects adolescent's beliefs; and the cognitive-affective theories show how substance-specific beliefs affect experimental substance use. Based on this information, Petraitis, Flay and Miller (1995) developed an integrative theory that is based on multiple types and multiple levels of influence. Although this is a tremendous step forward in solving the complex puzzle of substance use, a great deal of respect is owed to the substance use research pioneers who laid much of the preliminary groundwork.

As Swaim (1991) cautions, predictions of the future are always subject to error. However, the identification of relevant risk factors for a specific criterion behavior improves the accuracy of prediction. Given the complex nature of adolescent experimental substance use, special caution must be used when making predictions based on risk factors alone. As the number of risk factors increases, the probability of use and level of use (use, abuse, and dependence) rises. And, by eliminating risk factors, risk level is decreased.

Perceptions of Drug Use in Rural America

The stereotype of rural youth being more likely to grow up in a community where family, church, and school protect them from associations with peers who use substances (or are involved in deviant behaviors) is just that – a stereotype. The changing face of rural communities has affected both the potency and character of the influence that these institutions have on youth (Edwards, 1995).

In rural communities, the number of students in a grade is often very small (100 or fewer students) and may include four or five students who are drug-involved. In an environment where everyone tends to know everyone else, it is difficult (if not impossible) for those four or five students to be anonymous. Those four or five students (in this example) make up a significant proportion of the peer group of the other students, and as such, have a significant effect and influence on the characterization of their classmates. Therefore, in a small, rural area there are not enough students to get the isolation and dilution effects you would see in a larger, urban school (Edwards, 1992).

The smaller population of rural communities also means that rural youth have a smaller pool of peers from which to select. It is not always possible for youth that would prefer to abstain from any substance use to choose only friends who share this attitude. For this reason, rural youth may have a more generalized exposure to substance use (Edwards, 1995).

However, according to studies conducted by Beauvais and Segal (1992) in Native American populations, vulnerability to substance use is not necessarily just related to the fact that these adolescents live in rural environments. Among the Native American population samples examined, the higher rates of drug use may also be related to unstable

social environments (including poverty), mobility of families, lack of access to stable cultural roots, and extreme isolation. These conditions make it difficult to communicate social values that counter the use of drugs and other deviant behaviors (Beauvais & Segal, 1992).

However, there may still be some slight protection that a very small rural environment provides to young rural children in delaying the onset of experimental substance use and consequently, exposure to drug use [lifetime prevalence] (Peters, et al., 1992). The lack of anonymity in small towns may contribute to this. Unacceptable behavior of children is more likely to be observed by someone who knows them and is then reported to their parents (Edwards, 1992). Another explanation may be that adolescent drug use is a peer activity. Adolescents don't use drugs with adults. In fact, they need to get away from parental and other adult supervision in order to find an opportunity to use drugs. Younger children in very small rural environments may have less opportunity to meet with each other without adults around (Peters, et al., 1992).

However, as these same rural youth grow older, there is likely to be greater communication with youth in nearby cities and rural youth then become more like their urban counterparts (Edwards, 1992). By the time rural youth are in the higher grades, they are old enough to drive and have more chances to socialize away from adult supervision. With opportunity, whatever protective effects the rural environment provided essentially disappear (Peters, et al., 1992).

Rural youth are also no longer isolated from the influence of urban culture. An underlying factor that may influence all youth is the media, including television, movies, videos, and popular music. With the advent of affordable satellite dishes, cable

television, and video rentals, adolescents living in even the most isolated community can be exposed to the influences of urban lifestyles. Movies and rock star (MTV) videos that are popular with adolescents frequently portray lifestyles in which drug use is not only acceptable but also glamorous. Rural youth are probably no less intrigued by these forms of entertainment than are their urban counterparts (Peters, et al., 1992).

In addition to the difficulties in characterizing rural areas, small rural communities vary considerably in their community characteristics that complicates the understanding of substance use problems. Rural communities differ on a variety of factors such as socioeconomic conditions, economic stability, ethnic representation, strength of religious institutions, local versus consolidated schools, proximity to substance production laboratories, degree of isolation from health facilities, and on many other dimensions (Edwards, 1995, 1997).

Regardless of community characteristics, substance use is causing significant problems for youth despite whether they live in rural or urban communities. However, for rural youth the substance is more likely to be alcohol, whereas urban youth are more likely to report problems from drug use as well as alcohol use (Edwards, 1997). Unfortunately, the use of alcohol causes additional problems for rural youth. This may be partially due to rural youth having fewer available alternative activities or congregating places and, therefore, drinking becomes one of the primary purposes for congregating, which may ultimately lead to more consumption at any given time (Edwards, 1997).

Low population density and geographic isolation of rural communities generally means that young people spend more time in cars than their metropolitan counterparts.

Distances that must be traveled to entertainment events or friends' homes are more likely to be greater for rural youth than for those from larger communities which may also have forms of public transportation available (Edwards, 1997). Not only is alcohol use more likely to be followed by either driving a car or riding with a friend who has also been drinking, but for rural youth more alcohol use takes place while driving (Edwards, 1995). The relative lack of traffic on rural roads and the distances traveled often lead to driving at high rates of speed (Edwards, 1992). The implications for these findings are obvious, especially when taking into consideration factors such as poor road conditions and the unlit and poorly marked hazards of many country roads. The addition of substance use to the equation exacerbates the problem (Edwards, 1997).

Once a problem has emerged within a rural population, it may also be more difficult to assemble the resources necessary to prevent further increase of the problem or to provide the treatment needed. Economic deprivation, lack of (or limited) health facilities, considerable distances to potential sources of assistance, transportation problems, and rural attitudes and beliefs are among the major factors that make prevention and treatment in rural areas more difficult (Beauvais & Segal, 1992; Edwards, 1992). As evidenced by previously cited research, rural communities vary considerably and, therefore, have specific needs for prevention, intervention, and treatment programs that need to be tailored to individual community needs and congruent with the culture of the community (Edwards, 1992).

CHAPTER III: METHODOLOGY

The Tri-Ethnic Center for Prevention Research at Colorado State University has been conducting surveys on substance use and other issues for more than 30 years. Because of the wealth of data that has been accumulated and the need for such information in the field of prevention, especially related to substance use, the author conducted secondary analyses on aggregated data that was collected under the National Institute on Drug Abuse (NIDA) Federal Grant RO1 DA09349, "Adolescent Drug Use in Rural America."

Although the author is employed by the Tri-Ethnic Center and is the Field Director for the "Adolescent Drug Use in Rural America" project, this research was developed as a separate initiative from the original grant and is congruent with NIDA goals and objectives for use of the data by the author. The author was highly involved in planning, coordination, and administration of data collection for the "Adolescent Drug Use in Rural America" project including contacting and recruiting school districts (including pilot district) within the sampling frame. Project administration also included assisting in design and development of the survey instrument, survey instructions, and data base implementation. Correspondence (both verbal and written) with school districts was initiated by the author to assure that the data collection was kept to the planned time frame and was used to identify problems or unusual circumstances that could affect the

quality or ethics of the study. The author was also responsible for management operations of consent procedures, tracking survey participation and project records.

Research Design

The "Adolescent Drug Use in Rural America" project examined alcohol and drug use and associated risk factors among rural youth. The Community Drug and Alcohol Survey (CDAS) was administered to 7th through 12th grade students in a national sample of rural schools stratified by region and rurality with a comparison sample of non-rural schools. Grade configurations and feeder school information was obtained from communication provided by the schools and districts involved in the study. The project also obtained data on violence, victimization, high-risk drug use behaviors, and delinquency and their relationship to substance use.

The subject pool for this research consisted of 9,650 seventh and ninth grade students who lived in remote and rural communities of the contiguous U.S. (Table 5 and Table 6). The subjects represent a sampling taken from students across the country who were surveyed from 1996-2000 using the Community Drug and Alcohol Survey (CDAS). Although the overall sampling design was constructed to draw a representative sample of rural communities in the United States, this research focused on schools of two types of configuration and selection factors may have been introduced by eliminating non-conforming schools.

This study examined the following dependent variables: 1) substance use divided into three categories: a) alcohol use, b) marijuana use, and c) inhalant use. The independent variables were: 1) types of school transitions (early K-5 vs. delayed K-6 *and*

one feeder school vs. multiple feeder schools); 2) gender (male and female); 3) grade (7^{th} and 9^{th}); 4) school adjustment divided into three measures: a) attitude toward school, b) attitude toward teachers, and c) school performance; and 5) peer substance use associations divided into three measures: a) drug use of peers (how many of your friends do each of the following...use alcohol, use marijuana, use inhalants), b) peer encouragement to use drugs (how often have your friends asked you to use...alcohol, marijuana, inhalants), and c) peer sanctions against substance use (how much would your friends try to stop you from...using alcohol, using marijuana, using inhalants).

Definition of Rural

In the past, various ways have been used to define rural communities. The U.S. Bureau of the Census uses two distinct definitions of rural. The first, and older of the two, defines rural as any incorporated or unincorporated place of 2,500 persons or less that is not contiguous to a larger city. The second is based on a classification of counties into metropolitan and non-metropolitan categories. A metropolitan county is one with a central city of 50,000 or more or a contiguous county with 20 percent or more of its civilian labor force commuting to the central county for employment. Hence, contiguous metropolitan counties cluster into a metropolitan area (MSA or Metropolitan Statistical Area), with the remaining counties forming a non-metropolitan hinterland. A non-metropolitan county is one that does not have a central city of 50,000 or more, and is not classified as a satellite or commuting county.

A more refined measurement of rural, based on U.S. Bureau of the Census information, has been developed by demographers at the U.S. Department of Agriculture

that adds the dimension of proximity to metropolitan areas. It starts with the designation of counties as core counties if they are the location for the central or major cities of an MSA. Other counties are then designated by their location relative to a core county (Labao, 1990). All counties are ranked along a scale of core to adjacent to non-adjacent counties by their population size ("rurality"). This 17-part index ("Metropolitan Proximity Index" or MPI) classifies each county by population size and its designation as a MSA or non-MSA county (Table 2).

Table 2

Metropolitan Proximity Index (MPI)

The index is coded, from most urban to most rural as follows:
17. core metropolitan counties with more than one million population;
16. fringe counties with more than one million population;
15. core counties with populations of 750,000 to 999,999;
14. fringe county with populations of 750,000 to 999,999;
13. core counties with population 500,000 to 749,999;
12. fringe counties with populations of 500,000 to 749,000;
11. core counties with populations of 250,000 to 499,999;
10. fringe counties with populations of 250,000 to 499,999;
9. core counties with populations of 100,000 to 249,000;
8. fringe counties with populations of 100,000 to 249,000;
7. metro counties of 99,999 or less in population;
6. nonmetropolitan, adjacent counties with largest place of 10,000 or more;
5. nonmetropolitan, adjacent counties with a largest place of 2,500 to 9,999;
4. nonmetropolitan, adjacent counties with a largest place less than 2,500;
3. nonmetropolitan, adjacent counties with a largest place of 10,000 or more;
2. nonmetropolitan, adjacent counties with a largest place from 2,500 to 9,999;
1. nonmetropolitan, adjacent counties with a largest place less than 2,500.

Note. Labao, 1990.

Unfortunately, these statistical definitions do not fully define the richness and variety of rural life. They do not incorporate the differences in ways of earning a living or the differences in variations in physical environments (Brown & Zuiches, 1993; Swanson, 1990; Wilkinson, 1984). However, using this refined definition of rural

community populations and proximity to a metropolitan area combined with a further refined standard led to another operational definition of rurality for this research. This additional layer of description added accessibility in travel time, not miles, to a metropolitan area as part of the operational definition. Many rural communities are considered remote based on population size, but may, in fact, be just a small community that has easy access to the services and amenities of a larger community and hence should not really be classified as remote.

Participants and Sites

Rurality classifications used for this research were empirically based on 1990 census data following these guidelines: (1) Remote – population less than 2,000 and located more than 2 hours travel time from a metropolitan area; and (2) Rural – population between 2,000 and 20,000, or population less than 2,000 and located less than 2 hours travel time from a metropolitan area. This initial rurality classification was augmented with subjective evaluations based on input from community interviews that addressed actual accessibility to urban areas and services. Table 3 categorizes states as stratified within four regions (Northeast, Midwest, West, and South) of the United States based on classifications used by the FBI in the Uniform Crime Reporting Handbook (FBI, 1992). This project did not include sampling in Alaska and Hawaii. Sampling was also not done in California or Utah due to inability to survey using the protocol specified by the project goals, i.e. consent without documentation.

Table 3

FBI Regions

Northeast	Midwest	West	South
Connecticut	Illinois	Arizona	Alabama
Maine	Indiana	California	Arkansas
Massachusetts	Iowa	Colorado	Delaware
New Hampshire	Kansas	Idaho	Florida
New Jersey	Michigan	Montana	Kentucky
Pennsylvania	Missouri	New Mexico	Louisiana
Rhode Island	Nebraska	Oregon	Maryland
Vermont	North Dakota	Utah	Mississippi
	Ohio	Washington	North Carolina
	South Dakota	Wyoming	Oklahoma
	Wisconsin		South Carolina
			Tennessee
			Texas
			Virginia
			West Virginia

Secondly, communities were classified into one of two ruralities: remote or rural. Communities within each of the rurality categories were drawn proportionally to their representation in each region. Table 4 provides a distribution by region and rurality of the 29 communities included in the present study.

Table 4

Community Distribution by Rurality and Region

REMOTE	RURAL
MIDWEST (3)	MIDWEST (7)
WEST (3)	WEST (4)
SOUTH (1)	SOUTH (11)

Although the communities in the sample represent a sample of opportunity, it includes 9,650 students from communities with a wide geographic dispersion across the country. The sample was stratified to cover regions of the country, proximity to metropolitan areas and population size. Schools were randomly selected from the School

District Data Book derived from the National Center for Education Statistics (based on 1990 U.S. census data). The Office of Social and Economic Data Analyses (OSEDA) at the University of Missouri, Columbia was contracted to create a data file from selected criteria contained in the School District Data Book.

Table 5

One Feeder School and Multiple Feeder School Transition Sample

7th Grade Remote and Rural Youth / 9th Grade Remote and Rural Youth (n=9650)					
One Feeder School			Multiple Feeder Schools		
Grade	**Rurality**	**# Students**	**Grade**	**Rurality**	**# Students**
7	Remote	181	7	Remote	345
7	Rural	938	7	Rural	2952
9	Remote	207	9	Remote	404
9	Rural	1042	9	Rural	3581
Total	7	1119	Total	7	3297
Total	9	1249	Total	9	3985
Total	**Remote/Rural**	**2368**	**Total**	**Remote/Rural**	**7282**

Table 6

Early (K-5)/Delayed (K-6) Transition Sample

7th Grade Remote and Rural Youth / 9th Grade Remote and Rural Youth (n=9650)					
Early Transition (K-5)			Delayed Transition (K-6)		
Grade	**Rurality**	**# Students**	**Grade**	**Rurality**	**# Students**
7	Remote	351	7	Remote	175
7	Rural	3311	7	Rural	579
9	Remote	437	9	Remote	174
9	Rural	3962	9	Rural	661
Total	7	3662	Total	7	754
Total	9	4399	Total	9	835
Total	**Remote/Rural**	**8061**	**Total**	**Remote/Rural**	**1589**

Procedure for Data Collection

The 9,650 participants for this study to whom the 93-item anonymous survey was administered consisted of seventh and ninth grade students attending school in 29 remote and rural communities distributed across three census regions in the U.S. School districts in the communities were contacted and asked to participate in the study. This request was routinely presented to the principal, or other school official, for their approval and a "contract" letter acknowledging such approval was sent to the project Field Director. In school districts with a research office, review and approval was also obtained.

The arrangements with the schools were carefully negotiated so that the school and communities were fully protected and so that the school derived immediate benefit from agreeing to administer the survey. Protection of the school and community and the need to provide realistic benefits cannot be over emphasized.

Reporting of data results included only aggregate data and did not identify schools or communities in any publications. A notation is included in articles and papers that if a scientist needs access to data on individual schools, negotiation with the schools for permission to release the data to such a qualified individual will be attempted. Without that permission, identifiable data cannot be released.

More subtle damage occurs when research fails to directly benefit the school(s). In many instances, research done in schools benefits only the researchers, not the cooperating schools. To offset this effect, every school in this project received a complete report on substance use and other related issues in their school within two months of survey completion. These reports included tables, graphs, colored overhead transparencies, scripts for presenting the data and news releases (if the school wanted to

use them in prevention planning/programming). Further assistance and information was also available to schools.

In previous studies, it has been found that approximately seven out of ten rural schools are willing to participate in surveys. This high rate of acceptance is probably due to two major factors: (1) the ability to provide each participating school with a detailed report on substance use and other issues in their school at no cost; and (2) centralized decision making in rural communities that involves fewer "layers" of approval. The major reason for non-participation historically has been that schools had just administered another survey. Where schools elected not to participate, an alternate school was drawn from the selected county and another community was randomly drawn from a remote or rural category.

Once school approval was obtained, arrangements were made to send the survey to the school. Parents were notified of the nature of the survey (see Appendix C for Parent Consent Letter) and were given an opportunity to withdraw their children from the project (see Appendix D for Parent Notice). When surveys were administered to students at school, parents were fully informed of the survey, including the date it was to be given, the procedures to be used and the types of questions that were asked. In addition, parents had the opportunity to examine a copy of the survey at the school before it was administered. Parents were informed that if they did not wish their child to participate (or if the child did not wish to participate) they could notify the school (verbally or in writing) and the child would then be excused from participation. This procedure meets requirements for informing the parents and leaving the decision to participate with them and at the same time leads to a high participation rate for the survey.

With proper care in selecting survey dates, schools have been able to obtain a large proportion of the students who are enrolled in a given school. Survey coordinators at each school were cautioned to not schedule a survey near the beginning of a holiday nor at the end of the school semester since absenteeism can be very high at those times. However, there are always a number of students who are not in attendance on the day the survey is given. In the past, "make-up" surveys for these students have been scheduled, but there has been trouble with those "make-up" sessions. Make-up sessions may cause students to feel isolated or identified and the quality of the resulting data has consequently been less meaningful. Because of the cost and this previous experience where the results are of minimal value, attempts to survey students not in the first sample were not made. Instead any school that did not survey 75 percent (overall participation) of enrolled students received a report but was dropped from the sample and replaced.

Participation was strictly voluntary and participants could withdraw, or could be withdrawn by their parents (if they were still minors), until the survey had actually been collected. After surveys were collected, there was no way to identify the subject's survey, so withdrawal from the study was not possible after that point. Additionally, subject data cannot be accessed by anyone outside of the research project.

Rural youth who did not read English well enough to take the survey were not included in the study. The loss of these few participants did not alter overall results. Problems of translation and subsequent validity would make the data questionable, if they had been included. While there are new immigrants who speak Spanish (or another language) and do not have adequate English skills, a good share of these also do not have adequate foreign language reading skills to take a translated survey. The critical aspect

of dealing with these students was to treat them courteously, and not to do anything that would denigrate them.

School personnel (in most cases the regular classroom teachers) administered the survey. Teachers were provided with written instructions for giving the survey (see Appendix B for instructions to teachers and instructions for students). These include: (1) reading a statement about the anonymity of the data to students; (2) remaining in an area of the classroom where student answers cannot be observed, but to maintain fairly tight control over classroom behavior – the content of the survey can occasionally lead to joking around that, if left unchecked, can reduce the quality of responses; (3) emphasizing the voluntary nature of the survey; (4) emphasizing permission to stop answering at any point, or not answering any questions without penalty; and (5) procedures for collection of the surveys in a way that preserves anonymity. Written instructions to the teacher/coordinator indicated that the teacher was not to answer specific questions about survey questions, but rather to again indicate that the student need not answer any questions he or she did not understand. There was no place on any survey instrument for the student to put any self-identifying information other than age, gender, and grade. The students were instructed NOT to put their names or any extraneous identifying information on the surveys. These instructions were printed on the survey as well as emphasized verbally in the instructions given by the teacher/coordinator. The surveys were completed on optically scanned sheets so that participants only darkened circles with a No. 2 pencil, assuring that no handwriting or unusual writing instruments or styles could identify participants.

Once students completed the surveys they placed them face down and were asked to continue with regular class work until all students had completed the survey. An envelope was passed around and students were instructed to place their survey in the envelope in a random order. The envelope was then sealed and returned promptly to the main office or survey coordinator. The survey administrator in each school oversaw collection and shipping of the surveys. Once surveys were received at Colorado State University, they were entered into a computer, data was cleaned, validity checks were made, and the surveys were then placed in storage for future elimination. Using these procedures, the students were assured of complete confidentiality. The surveys contained no identifying data and there was no way that students could be linked to their responses.

There was no apparent risk (or risks were minimal) to the participants. Survey information has proven extremely useful for program planners, in terms of developing substance use programs, interventions, and applying for funding. The knowledge to be gained from this project has the potential to be of great value to the general welfare of rural adolescents, an often-overlooked population.

The Instrument

The Community Drug and Alcohol Survey (based on the American Drug and Alcohol Survey [ADAS] and used by permission under a Memo of Understanding between Colorado State University and Rocky Mountain Behavioral Science, Inc.) is an anonymous multiple-choice, paper and pencil, self-report questionnaire that takes approximately 45 minutes to complete. The internal consistency checks (refer to Data Cleaning) eliminate surveys of students who are having trouble understanding or

completing the survey. This procedure typically eliminates from 2 to 4 percent of completed surveys. The teacher/coordinator could also discretely inform students who were likely to have trouble with the survey that they could complete as much of it as they could (or wanted to), and to simply hand in an incomplete survey when the other students handed in theirs.

The survey has had extensive development for reliability and validity. Most drug surveys use individual items to assess drug use, so internal consistency measures of reliability are not available. However, the ADAS uses short scales to assess involvement with each drug. The CDAS drug survey items (see Appendix A) asked students about their substance use in the last month (alcohol, marijuana, and inhalants), the way in which they used the substance (alcohol and marijuana), ever using inhalants, and self identification as a user (alcohol, marijuana, inhalants). The instrument also measures a variety of additional variables, however, the focus of this study was to examine the variables that were related to substance use, school adjustment, and peer substance use climate.

Cronbach alpha reliabilities for scales assessing drug involvement for the American Drug and Alcohol Survey (ADAS) are presented in Table 7 (Oetting & Beauvais, 1990). Alpha reliabilities above .70 are considered good when measures are used in large surveys, and alpha reliabilities from .80 to .99 are considered to be exceptionally high. The strong alpha reliabilities for the ADAS of the drug use scales show that students are responding consistently to these survey items (Oetting & Beauvais, 1990).

Table 7

Drug Involvement Scale Reliabilities

Cronbach Alpha Reliabilities for Scales Assessing Drug Involvement
(American Drug and Alcohol Survey, 7 – 12th Grade)

	Groups				
Drug involvement scales (no. of items)	White Americans (n = 714)	Mexican Americans (n = 719)	Native Americans (n = 2,014)	Black Americans (n = 810)	Asian Americans (n = 386)
Alcohol (10)	.92	.92	.88	.92	.92
Marijuana (3)	.87	.88	.94	.88	.88
Inhalants (5)	.92	.89	.83	.94	.94

Establishing survey validity is not as straightforward as reliability and usually requires evidence from several sources. If the survey is actually measuring rates of drug use, we expect to find concurrent validity, meaning that the survey results are consistent with other surveys that also measure drug use. Concurrent validity for the ADAS has been established by demonstrating that similar results are obtained when results are compared with the findings from other well-designed and established surveys over time (Rocky Mountain Behavioral Science [RMBSI], 2001). The National Institute on Drug Abuse (NIDA), for example, supports the University of Michigan's National *Monitoring the Future Survey* (Johnston, O'Malley, & Bachman, 1992) which uses stratified random sampling (Oetting & Beauvais, 1990). *Monitoring the Future Survey* tracks drug use nationally and reports national results every year. When the ADAS is compared with those national results, they are essentially the same. While it is conceivable that students in one location may "collude" in the faking of survey results, it is difficult to imagine a conspiracy on the part of students across the country (RMBSI, 2001).

In addition, similar survey versions of the ADAS have been given to more than a million students over the past five years. The present survey was updated in September

1996 and assesses a respondents use of several drugs: alcohol, tobacco, marijuana, cocaine, crack, stimulants, methamphetamines, downers, quaaludes, tranquilizers, inhalants, hallucinogens, PCP, and heroin.

The CDAS provides several measures of drug involvement for each substance and are assessed by questions that ask about use in the last month and the nature of use. Self-identification as a user or non-user is also measured. The survey contains psychosocial scales, including school adjustment (attitude toward school, attitude toward teachers, and school performance), peer sanctions, peer encouragement, peer substance use (peer substance use climate). Two latent socialization variables (school adjustment and peer drug associations) have been used in previous studies in which the following Cronbach alpha reliabilities were obtained: school adjustment, [0.72-0.80] and peer drug associations, [0.85-0.91] (Swaim, Bates & Chavez, 1998).

Measures

Demographics

Grade and gender were measured by self-report. The survey question that measures grade is found in CDAS question #1 (refer to Appendix A). The survey question that measures gender is found in CDAS question #2 (refer to Appendix A).

School Adjustment

School adjustment was assessed by three variables: attitude toward school, attitude toward teachers, and (self-report) school performance. Attitude toward school is a two-item scale with questions that ask if the student likes school and if school is fun. Attitude toward teachers is a two-item scale with questions that ask if the student likes his

or her teachers and if their teachers like him or her. School performance is a two-item scale with questions that ask what kind of grades the student gets and what kind of student the adolescent is.

School adjustment scales were measured by scoring responses on the three school adjustment variables (attitude toward school, attitude toward teachers, and school performance). Responses from each pair of items were summed to produce a scale with a possible score ranging from 2-8.

The survey questions that assess *attitude toward school* are found in CDAS question #17 (refer to Appendix A): How much do you agree with each of the following? I like school (a lot, some, not much, not at all); School is fun (a lot, some, not much, not at all). The survey questions that assess *attitude toward teachers* are found in CDAS question #18 (refer to Appendix A): I like my teachers (a lot, some, not much, not at all); My teachers like me (a lot, some, not much, not at all). The survey questions that assess *school performance* are found in CDAS questions #19 and #20 (refer to Appendix A): What kind of grades do you get? (very good, good, not too good, poor); What kind of student are you? (very good, good, not too good, poor).

Peer Substance Use Climate

Peer substance use climate was measured by three peer variables: peer sanctions, peer encouragement, and peer use. Each of the peer substance use scales is a composite. For example, the three peer sanction items ask to what extent friends would go to stop the student from using substances (alcohol, marijuana, and inhalants); peer encouragement to use is measured by asking how often friends have asked the student to use a substance (alcohol, marijuana, and inhalants); and peer use is measured by asking how many

friends use various substances (alcohol, marijuana, and inhalants). Responses from each set of items were summed to produce a scale with a possible score ranging from 3-12.

The survey questions used for *peer sanctions* are found in CDAS questions #12 and #13 (refer to Appendix A): How much would your friends try to stop you from getting drunk, using marijuana, using inhalants (a lot, some, not much, not at all). The survey questions used for *peer encouragement* are found in CDAS questions #14 and #15 (refer to Appendix A): How often have your friends asked you to get drunk, use marijuana, use inhalants? (very often, some, not very often, not at all). The survey question used for *peer use* is found in CDAS question #16 (refer to Appendix A): How many of your friends do each of the following...a) get drunk, use marijuana, use inhalants? (none, a few, most of them, all of them).

The subscales for this research (school adjustment and peer substance use climate) were previously used to measure school adjustment and peer drug associations in structural equation models (Swaim, Oetting, & Casas, 1996; Swaim, Oetting, Thurman, Beauvais, & Edwards, 1993).

Substance Use

Substance use was assessed by three scales; alcohol, marijuana, and inhalants. Alcohol and marijuana were each measured by three variables; use in the last month, how the substance is used, and self-identification as a user. Use in the last month (alcohol) is a five-item scale with questions that ask the student to indicate the number of times used. Use in the last month (marijuana) is a six-item scale with questions that ask the student to indicate the number of times used. How alcohol is used is a five-item scale with questions that ask if the student doesn't drink, drinks just a glass or two, drinks enough to feel it a

little, drinks enough to feel it a lot, or until they get really drunk. How marijuana is used is a six-item scale with questions that ask if the student does not use it, has smoked it, has eaten it, uses a "bong" or other equipment, uses sinsemilla, or uses hashish (hash).

Inhalants were measured by three variables; use in the last month, ever used, and self-identification as a user. Use in the last month is a five-item scale with questions that ask the student to indicate the number of times inhalants were used. Ever used is a two-item scale that asks the student to indicate if they have ever used inhalants.

Self-identification as a user (alcohol, marijuana, and inhalants) is a six-point scale that asks the student to identify themselves as a non-user, very light user, light user, moderate user, heavy user, or very heavy user.

The survey questions that assess *alcohol* use are found in CDAS questions #3, #4, and #5 (refer to Appendix A): How often in the last month have you had alcohol to drink, (none, 1-2 times, 3-9 times, 10-19 times, 20 or more times); How do you like to drink? (I don't drink, Just a glass or two, Enough to feel it a little, Enough to feel it a lot, Until I get really drunk); In using alcohol are you a (non-user, very light user, light user, moderate user, heavy user, very heavy user).

The survey questions that assess *marijuana* use are found in CDAS questions #6, #7, and #8 (refer to Appendix A): How often in the last month have you used marijuana (none, 1-2 times, 3-9 times, 10-19 times, 20 or more times, Several times every day); How have you used marijuana (I have not used it, Smoked it, Eaten it, Used a "bong" or other equipment, Used sinsemilla, Used hashish [hash]); In using marijuana are you a (non-user, very light user, light user, moderate user, heavy user, very heavy user).

The survey questions that assess *inhalant* use are found in CDAS questions #9, #10, and #11 (refer to Appendix A): Have you used inhalants ("sniff" or "huff" something like glue, gas, paint, etc.) to get high during the last month? (no, 1-2 times, 3-9 times, 10-19 times, 20 or more times); Have you ever "sniffed" [or "huffed"] something like glue, gas, paint, etc. to get high? [Do NOT include cocaine] (yes, no). In using inhalants are you a (non-user, very light user, light user, moderate user, heavy user, very heavy user).

Alcohol Scoring:

If alc in last month = 5 and how drink $\geq$ 4, alcohol = 7
If alc in last month = 5, alcohol = 6
If alc in last month = 4 and (how drink $\geq$ 4 or alc user $\geq$ 4), alcohol =5
If alc in last month = 4, alcohol = 4
If alc in last month = 3 and (how drink $\geq$ 4 or alc user $\geq$ 3), alcohol = 3
If alc in last month $\geq$ 2 and alc user $\geq$ 2, alcohol = 2
If alc user $\geq$ 2, alcohol = 1
No use = 0

Alcohol questions used for scoring:

How often in the last month have you had alcohol to drink (alc in last month)?
0 = none, 2 = 1-2 times, 3 = 3-9 times, 4 = 10-19 times, 5 = 20 or more times,

How do you like to drink (how drink)?
0 = I don't drink, 1 = Just a glass or two, 2 = Enough to feel it a little,
3 = Enough to feel it a lot, 4 = Until I get really drunk

In using alcohol are you a (alc user)...
0 = non-user, 1 = very light user, 2 = light user, 3 = moderate user,
4 = heavy user, 5 = very heavy user.

Marijuana Scoring:

If marij in last month = 5 and (how marij = 1), marij = 7
If marij in last month = 5 or (marij in last month = 4 and how marij = 1), marij = 6
If marij in last month = 4, marij = 5
If marij in last month = 4 or (marij in last month $\geq$ 3 and how marij = 1), marij = 4
If marij in last month = 3, marij = 3
If marij in last month = 2, marij = 2
No use = 0

Marijuana questions used for scoring:

How often in the last month have you used marijuana (marij in last month)?
0 = none, 1 = 1-2 times, 2 = 3-9 times, 3 = 10-19 times, 4 = 20 or more times,
5 = Several times every day

How have you used marijuana (how marij)?
0 = I have not used it, 5 = Smoked it, 4 = Eaten it, 3 = Used a "bong" or other equipment, 2 = Used Sinsemilla, 1 = Used hashish [hash]

In using marijuana are you a (marij user)...
0 = non-user, 1 = very light user, 2 = light user, 3 = moderate user,
4 = heavy user, 5 = very heavy user.

Inhalant Scoring:

If sniff in last month = 5, sniff = 7
If sniff in last month = 4, sniff = 6
If sniff in last month = 3 and (sniff use $\geq$ 4), sniff = 5
If sniff in last month = 3 or (sniff in last month = 2, sniff use $\geq$ 4), sniff = 4
If sniff in last month = 2 and (sniff use $\geq$ 3), sniff = 3
If sniff in last month = 2, sniff = 2
If ever sniff = 2 and (sniff use $\geq$ 2), sniff = 1
No use = 0

Inhalant questions used for scoring:

How often in the last month have you used inhalants ["sniff" or "huff" something like glue, gas, paint, etc.]? (sniff in last month)
0 = none, 2 = 1-2 times, 3 = 3-9 times, 4 = 10-19 times, 5 = 20 or more times

Have you ever "sniffed" [or "huffed] something like glue, gas, paint, etc. to get high? (ever sniff)
No = 1
Yes = 2

In using inhalants are you a... (sniff user)
0 = non-user, 1 = very light user, 2 = light user, 3 = moderate user,
4 = heavy user, 5 = very heavy user.

The final substance use scales for alcohol, marijuana, and inhalants range from 0 to 7 with 0 representing no use and 7 representing daily or addictive patterns of use. (Oetting & Beauvais, 1990).

Cronbach alpha reliabilities for scales in this study assessing substance use, school adjustment, and peer substance use climate are presented in Table 8, Table 9, and Table 10.

Table 8

Substance Use Scale Reliabilities

Cronbach Alpha Reliabilities for Scales Assessing Substance Use (*Community Drug and Alcohol Survey*, 7th and 9th Grade)

	7th		9th	
	Male	Female	Male	Female
Alcohol	.89	.89	.89	.89
Marijuana	.77	.77	.78	.79
Inhalants	.82	.89	.87	.87

Table 9

School Adjustment Scale Reliabilities

Cronbach Alpha Reliabilities for Scales Assessing School Adjustment (*Community Drug and Alcohol Survey*, 7th and 9th Grade)

	7th		9th	
	Male	Female	Male	Female
Attitude Toward School	.86	.83	.87	.85
Attitude Toward Teachers	.87	.81	.86	.83
School Performance	.82	.82	.84	.86

Table 10

Peer Substance Use Climate Scale Reliabilities

Cronbach Alpha Reliabilities for Scales Assessing Peer Substance Use Climate (*Community Drug and Alcohol Survey*, 7th and 9th Grade)

	7th		9th	
	Male	Female	Male	Female
Peer Sanctions	.84	.82	.81	.79
Peer Encouragement	.72	.71	.69	.70
Peer Use	.82	.79	.75	.77

Data Cleaning

An optical scanner "reads" the survey instruments. Poorly marked surveys (dotted, X'd, written on, etc.), if otherwise complete, were cleaned by hand and scanned. Several checks were made to be sure that conditions of survey administration were adequate; (1) If less than 75 percent (overall participation) of enrolled students were surveyed in a school, that location was not included in analyses and was replaced in the overall sample; (2) Two survey questions ask students whether the student answered honestly. If more than 10 percent of the students from a school indicate they were not honest when they answered the survey questions, it indicates the students in that location may not have felt surveying conditions provided anonymity (i.e. teachers could read students' answers, directions did not adequately emphasize confidentiality, etc.), and the location was replaced in the sample; and (3) 40 different internal consistency checks to help eliminate threats to validity were made on each survey including (a) indicating use of a fake drug; (b) indicating a behavior was engaged in during the last year or last month on one item and that it was never done on another item; (c) conflicting answers to repeated items; (d) indicating unlikely types of drug use such as daily use of three different drugs; (e) marking the same response on a block of items where that would be unlikely; (f) indicating greater perceived harm for occasional use than regular use; (g) extremely rare drug use behaviors (such as use of heroin without trying marijuana, etc. Any student can make an unintended error in marking, but if there are three or more inconsistencies, the student's survey was classified as an "inconsistent responder", eliminated from the sample, and not included in analyses. Similar criteria were applied to

data from over 600 schools that administered ADAS surveys over the last two years and only 3 percent were eliminated from sampling for these reasons.

Data Analysis

Because there was limited research on the effects of school transition, and virtually no data on the effects of school transitions on school adjustment, peer substance use climate, and adolescent substance use, it was considered appropriate to first examine those effects by using MANOVA analyses to "map" this uncharted territory. After developing an understanding of the interactions of the variables through the MANOVAs, the final step in the analysis determined the effects of school transitions (early vs. delayed *and* one feeder vs. multiple feeders) on substance use (alcohol, marijuana, and inhalants), first considering the independent effects of school transitions then with gender, school adjustment, and peer substance use climate being controlled. This was accomplished by hierarchical multiple regression analysis.

Early vs. Delayed Transition Analyses

Since each of the types of transitions (early vs. delayed *and* one feeder vs. multiple feeders) may effect 7th and 9th graders differently, each of the following analyses was conducted separately by grade. The effect of gender and early (K-5) vs. delayed (K-6) transition type on school adjustment (attitude toward school, attitude toward teachers, and school performance) was assessed by using a 2X2 MANOVA. The effect of gender and early vs. delayed transition type on three measures of peer substance use climate (peer sanctions, peer encouragement, and peer substance use) was assessed by using a

2X2 MANOVA, as was the effect of gender and early vs. delayed transition type on three measures of substance use (alcohol use, marijuana use, and inhalant use).

One Feeder vs. Multiple Feeder Transition Analyses

Again, since each of the types of transitions (early vs. delayed *and* one feeder vs. multiple feeders) may effect 7th and 9th graders differently, each of the following analyses was conducted separately by grade. The effect of gender and one feeder vs. multiple feeder transition type on three measures of school adjustment (attitude toward school, attitude toward teachers, and school performance) was assessed by using a 2X2 MANOVA (Multivariate Analysis of Variance), as were the effect of gender and one feeder vs. multiple feeder transition type on three measures of peer substance use climate (peer sanctions, peer encouragement, and peer substance use) and the effect of gender and one feeder vs. multiple feeder transition type on three measures of substance use (alcohol use, marijuana use, and inhalant use).

Hierarchical Multiple Regression Analyses

Since each of the types of transitions (early vs. delayed *and* one feeder vs. multiple feeders) may effect 7th and 9th graders differently, each of the following analyses was conducted separately by grade. In order to assess the effects of transition type on substance use after controlling for gender, school adjustment variables, and peer substance use climate variables, three hierarchical multiple regressions were performed for each of the three measures of substance use (alcohol use, marijuana use, and inhalant use). At step one, type of transition was entered into the equation. After step one, the

regression equation was assessed to determine the independent effects of type of transition (early vs. delayed *and* one feeder vs. multiple feeders). After tests for independent effects, both transition types were entered into the equation. This procedure was followed at step two by entry of grade, gender, school adjustment variables, and peer substance use climate variables. All non-significant predictors were deleted from the final regression equation.

CHAPTER IV: RESULTS

This chapter reports the findings of the study. The means and standard deviations for school adjustment variables, peer substance use climate variables, and substance use variables by level of time of transition (early and delayed, hereafter also referred to as Transition Time) and gender among 7th graders are presented in Table 11. The means and standard deviations for school adjustment variables, peer substance use climate variables, and substance use variables by level of time of transition and gender among 9th graders are presented in Table 12. The means and standard deviations for school adjustment variables, peer substance use climate variables, and substance use variables by number of feeder schools (one feeder and multiple feeders) and gender among 7th graders are presented in Table 13. The means and standard deviations for school adjustment variables, peer substance use climate variables, and substance use variables by number of feeder schools and gender among 9th graders are presented in Table 14.

Table 11

Means and (Standard Deviations) by Transition Time (7th Graders)

	Early (K-5)		Delayed (K-6)	
	Males	**Females**	**Males**	**Females**
School Adjustment				
Attitude toward school	5.35 (1.89)	5.99 (1.57)	5.51 (1.74)	6.04 (1.55)
Attitude toward teachers	5.94 (1.71)	6.61 (1.35)	6.18 (1.59)	6.58 (1.33)
School performance	6.27 (1.32)	6.73 (1.19)	6.26 (1.20)	6.55 (1.10)
Peer Substance Use Climate				
Peer Sanctions	9.12 (3.11)	9.99 (2.81)	9.35 (2.99)	9.68 (2.92)
Peer Encouragement	3.91 (1.78)	3.71 (1.56)	3.89 (1.71)	3.76 (1.55)
Peer Use	4.25 (1.84)	4.22 (1.70)	4.15 (1.65)	4.15 (1.63)
Substance Use				
Alcohol Use	.54 (1.08)	.39 (.89)	.63 (1.04)	.48 (.94)
Marijuana Use	.28 (1.14)	.18 (.85)	.30 (1.21)	.10 (.61)

Table 12

Means and (Standard Deviations) by Transition Time (9th Graders)

	Early (K-5)		Delayed (K-6)	
	Males	**Females**	**Males**	**Females**
School Adjustment				
Attitude toward school	5.12 (1.79)	5.60 (1.58)	4.91 (1.80)	5.38 (1.52)
Attitude toward teachers	5.91 (1.54)	6.34 (1.31)	5.63 (1.58)	6.13 (1.32)
School performance	6.12 (1.29)	6.54 (1.17)	6.03 (1.26)	6.36 (1.12)
Peer Substance Use Climate				
Peer Sanctions	7.94 (3.03)	9.38 (2.68)	7.41 (3.13)	8.57 (2.85)
Peer Encouragement	5.21 (2.31)	4.82 (2.15)	4.81 (2.10)	4.78 (2.02)
Peer Use	5.59 (2.02)	5.46 (1.96)	5.57 (1.94)	5.57 (1.81)
Substance Use				
Alcohol Use	1.27 (1.54)	1.04 (1.29)	1.31 (1.58)	1.28 (1.32)
Marijuana Use	1.01 (2.09)	.58 (1.53)	.96 (2.00)	.61 (1.50)
Inhalant Use	.30 (1.00)	.27 (.92)	.21 (.78)	.29 (.96)

Table 13

Means and (Standard Deviations) by Number of Feeders (7th Graders)

	One Feeder		Multiple Feeders	
	Males	**Females**	**Males**	**Females**
School Adjustment				
Attitude toward school	5.39 (1.80)	6.07 (1.49)	5.38 (1.88)	5.98 (1.60)
Attitude toward teachers	5.94 (1.57)	6.54 (1.30)	6.01 (1.73)	6.63 (1.36)
School performance	6.30 (1.24)	6.69 (1.12)	6.25 (1.32)	6.70 (1.19)
Peer Substance Use Climate				
Peer Sanctions	9.62 (2.91)	10.17 (2.64)	9.00 (3.14)	9.86 (2.89)
Peer Encouragement	3.70 (1.57)	3.67 (1.57)	3.98 (1.83)	3.73 (1.55)
Peer Use	4.04 (1.72)	4.11 (1.56)	4.30 (1.84)	4.25 (1.74)
Substance Use				
Alcohol Use	.59 (1.19)	.38 (.93)	.54 (1.03)	.41 (.89)
Marijuana Use	.14 (.84)	.12 (.68)	.33 (1.24)	.18 (.86)
Inhalant Use	.18 (.80)	.24 (.88)	.25 (.92)	.27 (.94)

Table 14
Means and (Standard Deviations) by Number of Feeders (9th Graders)

	One Feeder		Multiple Feeders	
	Males	**Females**	**Males**	**Females**
School Adjustment				
Attitude toward school	5.20 (1.73)	5.63 (1.51)	5.05 (1.81)	5.55 (1.59)
Attitude toward teachers	5.90 (1.48)	6.31 (1.29)	5.86 (1.57)	6.31 (1.32)
School performance	6.16 (1.22)	6.45 (1.15)	6.09 (1.30)	6.53 (1.17)
Peer Substance Use Climate				
Peer Sanctions	8.11 (3.01)	9.50 (2.64)	7.79 (3.06)	9.17 (2.75)
Peer Encouragement	4.87 (2.12)	4.60 (2.05)	5.24 (2.33)	4.89 (2.15)
Peer Use	5.41 (1.88)	5.29 (1.93)	5.65 (2.04)	5.54 (1.94)
Substance Use				
Alcohol Use	1.19 (1.51)	1.00 (1.26)	1.30 (1.56)	1.10 (1.31)
Marijuana Use	.80 (1.90)	.41 (1.30)	1.07 (2.12)	.64 (1.58)
Inhalant Use	.24 (.84)	.30 (1.01)	.31 (1.00)	.27 (.90)

Time of Transition (7th Graders)

A 2 X 2 MANOVA on time of transition (early and delayed) by gender was conducted on the *three school adjustment variables*. The results contained in Table 15 indicate a non-significant interaction of time of transition by gender. The main effect for time of transition was significant. However, none of the univariate F's were significant.

The main effect for gender on school adjustment variables was significant. This was accounted for on the univariate level by all three of the school adjustment variables. On each of the school adjustment variables, females reported higher levels of school adjustment than males.

Table 15

MANOVA and Univariate Results – School Adjustment (Transition Time) 7th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Transition Time	.99681	.003	3.68	3	3452	p<.05
*n.s. univariate F tests						
Gender	.97524	.025	29.22	3	3452	p<.001
Attachment Toward School			61.82			p<.001
Attachment Toward Teachers			65.27			p<.001
School Performance			50.40			p<.001
Transition Time X Gender	.99851	.001	1.72	3	3452	n.s.

A 2 X 2 MANOVA on time of transition by gender was conducted on the three *peer substance use climate variables* (peer sanctions, peer encouragement, and peer use). The results contained in Table 16 indicate a non-significant interaction of time of transition by gender. The main effect for time of transition was not significant. The main effect for gender on peer substance use climate variables was significant. This was

accounted for by two of the three peer substance use climate variables. Females reported higher levels of peer sanctions against drugs than males and males reported higher peer encouragement to use drugs than did females. Males and females did not report any differences in the levels of drug use among their peers.

Table 16

MANOVA and Univariate Results – Peer Substance Use Climate (Transition Time) 7th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Transition Time	.99920	.001	1.00	3	3739	n.s.
Gender	.99227	.008	9.71	3	3739	p<.001
Peer Sanctions			21.92			p<.001
Peer Encouragement			5.26			p<.05
Transition Time X Gender	.99868	.001	1.64	3	3739	n.s.

A 2 X 2 MANOVA on time of transition by gender was conducted on the three *substance use variables* (alcohol use, marijuana use, and inhalant use). The results contained in Table 17 indicate a non-significant interaction of time of transition by gender. The main effect for time of transition was not significant. However, this effect approached significance. In examination of this univariate result, delayed transition (K-6) was associated with higher alcohol use.

The main effect for gender on substance use variables was significant. This was accounted for on the univariate level by two of the three substance use variables. Males reported higher levels of alcohol use and marijuana use than females.

Table 17

MANOVA and Univariate Results –Substance Use (Transition Time) 7th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Transition Time	.99817	.002	2.55	3	4174	n.s.
Gender	.99347	.007	9.15	3	4174	p<.001
Alcohol Use			13.82			p<.001
Marijuana Use			13.13			p<.001
Transition Time X Gender	.99936	.001	.89	3	4174	n.s.

Time of Transition (9th Graders)

A 2 X 2 MANOVA on time of transition (early and delayed) by gender was conducted on the three *school adjustment variables* (attitude toward school, attitude toward teachers, and school performance). The results contained in Table 18 indicate a non-significant interaction of time of transition by gender. The main effect for time of transition was significant. All of the univariate F's were significant. Students in early transition schools (K-5) reported more positive attitudes toward school, more positive attitudes toward teachers, and higher levels of school performance than students in delayed transition schools (K-6).

The main effect for gender on school adjustment variables was significant. This was accounted for on the univariate level by each of the three school adjustment variables. For each of the school adjustment variables, females reported higher levels of school adjustment than males.

Table 18

MANOVA and Univariate Results – School Adjustment (Transition Time) 9th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Transition Time	.99593	.004	6.24	3	4578	p<.001
Attitude Toward School			9.82			p<.05
Attitude Toward Teachers			17.78			p<.001
School Performance			7.54			p<.05
Gender	.98187	.018	28.18	3	4578	p<.001
Attitude Toward School			48.27			p<.001
Attitude Toward Teachers			62.80			p<.001
School Performance			56.22			p<.001
Transition Time X Gender	.99952	.000	.73	3	4578	n.s.

A 2 X 2 MANOVA on time of transition by gender was conducted on the three *peer substance use climate variables* (peer sanctions, peer encouragement, and peer use). The results contained in Table 19 indicate a non-significant interaction of time of transition by gender. The main effect for time of transition was significant. This was accounted for on the univariate level by two of the three peer substance use climate variables. Students in early transition schools (K-5) reported higher levels of peer sanctions against drugs and students in delayed transition schools (K-6) reported higher levels of peer encouragement to use drugs.

The main effect for gender on peer substance use climate variables was significant. This was accounted for by two of the three peer substance use climate variables. Females reported higher levels of peer sanctions against drugs and males reported higher peer encouragement to use drugs. Males and females did not report any differences in the levels of drug use among their peers.

Table 19

MANOVA and Univariate Results – Peer Substance Use Climate (Transition Time) 9th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Transition Time	.98605	.014	22.36	3	4743	p<.001
Peer Sanctions			32.78			p<.001
Peer Encouragement			6.19			p<.05
Gender	.96857	.031	51.31	3	4743	p<.001
Peer Sanctions			124.41			p<.001
Peer Encouragement			5.51			p<.05
Transition Time X Gender	.99905	.001	1.50	3	4743	n.s.

A 2 X 2 MANOVA on time of transition by gender was conducted on the three *substance use variables* (alcohol use, marijuana use, and inhalant use). The results contained in Table 20 indicate a non-significant interaction of time of transition by gender. The main effect for time of transition was significant. This was accounted for by one of the three substance use variables. Students in delayed transition schools (K-6) reported higher levels of alcohol use than students in early transition schools (K-5).

The main effect for gender on substance use was significant. This was accounted for by two of the three substance use variables. Males reported higher alcohol use and higher marijuana use than females.

Table 20

MANOVA and Univariate Results –Substance Use (Transition Time) 9th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Transition Time	.99764	.002	3.99	3	5050	p<.05
Alcohol Use			6.66			p<.05
Gender	.99256	.007	12.61	3	5050	p<.001
Alcohol Use			5.49			p<.05
Marijuana Use			30.90			p<.001
Transition Time X Gender	.99909	.001	1.53	3	5050	n.s.

Transition - Number of Feeder Schools (7th Graders)

A 2 X 2 MANOVA on number of feeder schools (one feeder and multiple feeders) by gender was conducted on the three *school adjustment variables* (attitude toward school, attitude toward teachers, and school performance). The results contained in Table 21 indicate a non-significant interaction of number of feeder schools by gender. The main effect for number of feeder schools was not significant.

The main effect for gender on school adjustment variables was significant. This was accounted for on the univariate level by all three school adjustment variables. For each of the school adjustment variables, females reported higher levels of school adjustment than males.

Table 21

MANOVA and Univariate Results – School Adjustment (Number of Feeders) 7th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Number of Feeders	.99790	.002	2.42	3	3452	n.s.
Gender	.96115	.039	46.51	3	3452	p<.001
Attachment Toward School			95.27			p<.001
Attachment Toward Teachers			109.15			p<.001
School Performance			77.60			p<.001
Number of Feeders X Gender	.99951	.000	.56	3	3452	n.s.

A 2 X 2 MANOVA on number of feeder schools by gender was conducted on the three *peer substance use climate variables* (peer sanctions, peer encouragement, and peer use). The results contained in Table 22 indicate a non-significant interaction of number of feeder schools by gender. The main effect for number of feeder schools was significant. This was accounted for by all three peer substance use climate variables. Students in one feeder transition schools (one feeder school) reported higher levels of peer sanctions against drugs. Students in multiple feeder transition schools reported higher levels of peer encouragement to use drugs and higher levels of peer drug use.

The main effect for gender on peer substance use climate variables was significant. This was accounted for by two of the three peer substance use climate variables. Females reported higher levels of peer sanctions against drugs and males reported higher peer encouragement to use drugs. Males and females did not report any differences in the levels of drug use among their peers.

Table 22

MANOVA and Univariate Results – Peer Substance Use Climate (Number of Feeders) 7th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Number of Feeders	.99440	.006	7.02	3	3739	p<.001
Peer Sanctions			17.83			p<.001
Peer Encouragement			7.26			p<.05
Peer Use			9.86			p<.05
Gender	.98619	.014	17.45	3	3739	p<.001
Peer Sanctions			41.30			p<.001
Peer Encouragement			4.91			p<.05
Number of Feeders X Gender	.99894	.001	1.32	3	3739	n.s.

A 2 X 2 MANOVA on number of feeder schools by gender was conducted on the three *substance use variables* (alcohol use, marijuana use, and inhalant use). The results

contained in Table 23 indicate a significant interaction of number of feeder schools by gender. However, none of the univariate F's were significant. The main effect for number of feeder schools was significant. This was accounted for by one of the three peer substance use variables. Students in multiple feeder transition schools reported higher levels of marijuana use than students in one feeder transition schools.

The main effect for gender on substance use variables was significant. This was accounted for on the univariate level by two of the three substance use variables. Males reported higher alcohol use and marijuana use than females.

Table 23

MANOVA and Univariate Results –Substance Use (Number of Feeders) 7th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Number of Feeders	.99554	.004	6.23	3	4174	p<.001
Marijuana Use			12.54			p<.001
Gender	.99216	.008	11.00	3	4174	p<.001
Alcohol Use			23.52			p<.001
Marijuana Use			6.06			p<.05
Number of Feeders X Gender	.99796	.002	2.85	3	4174	p<.05
*n.s. univariate F tests						

Transition - Number of Feeder Schools (9th Graders)

A 2 X 2 MANOVA on number of feeder schools (one feeder and multiple feeders) by gender was conducted on the three *school adjustment variables* (attitude toward school, attitude toward teachers, and school performance). The results contained in Table 24 indicate a non-significant interaction of number of feeder schools by gender. The main effect for number of feeder schools was also not significant.

The main effect for gender on school adjustment variables was, however, significant. This was accounted for on the univariate level by all three school adjustment variables. For each of the school adjustment variables, females reported higher levels of school adjustment than males.

Table 24

MANOVA and Univariate Results – School Adjustment (Number of Feeders) 9th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Number of Feeders	.99867	.001	2.03	3	4578	n.s.
Gender	.97686	.023	36.15	3	4578	p<.001
Attachment toward School			63.86			p<.001
Attachment toward Teachers			74.75			p<.001
School Performance			75.87			p<.001
Number of Feeders X Gender	.99932	.001	1.03	3	4578	n.s.

A 2 X 2 MANOVA on number of feeder schools by gender was conducted on the three *peer substance use climate variables* (peer sanctions, peer encouragement, and peer use). The results contained in Table 25 indicate a non-significant interaction of number of feeder schools by gender. The main effect for number of feeder schools was significant. This was accounted for by all three of the peer substance use climate variables. Students in one feeder transition schools reported higher levels of peer sanctions against drugs. Students in multiple feeder transition schools reported higher levels of peer encouragement to use drugs and higher levels of peer drug use.

The main effect for gender on peer substance use climate variables was significant. This is accounted for by two of the three peer substance use climate variables. Females reported higher levels of peer sanctions against drugs and males reported higher peer encouragement to use drugs.

Table 25

MANOVA and Univariate Results – Peer Substance Use Climate (Number of Feeders) 9th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Number of Feeders	.99538	.005	7.33	3	4743	p<.001
Peer Sanctions			11.21			p<.001
Peer Encouragement			19.52			p<.001
Peer Use			13.22			p<.001
Gender	.95221	.048	79.35	3	4743	p<.001
Peer Sanctions			199.79			p<.001
Peer Encouragement			17.67			p<.001
Number of Feeders X Gender	.99986	.000	.22	3	4743	n.s.

A 2 X 2 MANOVA on number of feeder schools by gender was conducted on the three *substance use variables* (alcohol use, marijuana use, and inhalant use). The results contained in Table 26 indicate a non-significant interaction of number of feeder schools by gender. The main effect for number of feeder schools was significant. This was accounted for on the univariate level by two of the three substance use variables. Students reported higher alcohol use and higher marijuana use at multiple feeder schools than students at one feeder transition schools did.

The main effect for gender on substance use variables was significant. This was accounted for on the univariate level by two of the three substance use variables. Males reported higher alcohol use and marijuana use than females.

Table 26

MANOVA and Univariate Results –Substance Use (Number of Feeders) 9th Graders

Effect	Wilks' λ	η^2	F	Hypothesis df	Error df	Significance of F
Number of Feeders	.99632	.004	6.22	3	5050	p<.001
Alcohol Use			5.15			p<.05
Marijuana Use			17.63			p<.001
Gender	.98890	.011	18.89	3	5050	p<.001
Alcohol Use			16.98			p<.001
Marijuana Use			45.96			p<.001
Number of Feeders X Gender	.99943	.001	.95	3	5050	n.s.

Hierarchical multiple regressions

The remaining aim of the study was to assess the relationships among the *substance use variables* (alcohol, marijuana, inhalants) for 7th graders and 9th graders, *school adjustment variables* (attitude toward school, attitude toward teachers, school performance), *peer substance use climate variables* (peer sanctions, peer encouragement, peer use), gender, *transition time* (early [K-5], delayed [K-6]), and *number of feeders* (one feeder, multiple feeders). Specifically, it was important to determine whether *time of transition* and *number of feeders* were significant predictors of alcohol, marijuana, and inhalant use after controlling for the effects of gender, school adjustment variables, and peer substance use climate variables. This was accomplished by conducting a hierarchical multiple regression equation for each substance use variable for each grade. For each equation, *transition time* was entered first to determine its unique contribution. This process was repeated in a second equation with *number of feeders* entered first to determine its unique contribution. The final model considered transition time, number of

feeders, the control variable gender, the three peer substance use climate variables entered as a group, and the three school adjustment variables entered as a group, for inclusion. Variables were entered stepwise in the order just presented. The final model for each grade included all significant predictors. These final models, with non-significant predictors removed, are presented in Table 27 (7^{th} Graders) and in Table 28 (9^{th} Graders).

Table 27

Regression Equations for Final Models (7^{th} Graders)

Measure	**R^2**	**ΔR^2**	**Final β**	**T's**	**Sig. T**
Alcohol (7^{th}) Model					
Gender	.008	.008	-.05	-3.09	.002
Peer Substance Use Climate	.328	.320			
a) peer sanctions			-.08	-4.84	<.001
b) peer encouragement			.24	12.97	<.001
c) peer use			.32	16.93	<.001
School Adjustment	.333	.005			
a) school performance			-.08	-4.70	<.001
Marijuana (7^{th}) Model					
Number of Feeders	.004	.004	.03	2.20	.028
Peer Substance Use Climate	.262	.258			
a) peer sanctions			-.04	-2.50	.013
b) peer encouragement			.33	16.88	<.001
c) peer use			.20	9.84	<.001
School Adjustment	.265	.007			
a) school performance			-.06	-3.38	.001
Inhalants (7^{th}) Model					
Peer Substance Use Climate	.250	.250			
a) peer sanctions			-.09	-4.91	<.001
b) peer encouragement			.31	15.79	<.001
c) peer use			.20	9.98	<.001

Table 28

Regression Equations for Final Models (9th Graders)

Measure	R^2	ΔR^2	Final β	T's	Sig. T
Alcohol (9th) Model					
Transition Time	.002	.002	.03	2.99	.003
Peer Substance Use Climate	.329	.327			
a) peer sanctions			-.03	-1.99	.047
b) peer encouragement			.30	17.14	<.001
c) peer use			.26	14.89	<.001
School Adjustment	.340	.013			
a) attitude toward teachers			-.04	-3.06	.002
b) school performance			-.09	-6.13	<.001
Marijuana (9th) Model					
Number of Feeders	.003	.003	.03	2.08	.038
Gender	.016	.013	-.04	-3.42	.001
Peer Substance Use Climate	.331	.318			
a) peer sanctions			-.06	-3.85	<.001
b) peer encouragement			.38	21.76	<.001
c) peer use			.15	8.49	<.001
School Adjustment	.342	.024			
a) attitude toward teachers			-.06	-4.13	<.001
b) school performance			-.07	-5.05	<.001
Inhalants (9th) Model					
Gender	.001	.001	.03	2.28	.023
Peer Substance Use Climate	.193	.192			
a) peer sanctions			-.05	-2.84	.005
b) peer encouragement			.21	11.02	<.001
c) peer use			.21	10.85	<.001
School Adjustment	.198	.006			
a) attitude toward teachers			-.05	-3.29	.001
b) school performance			-.04	-2.17	.030

7th Grade Alcohol

With only *transition time* entered into the equation, a non-significant result was obtained (F [1, 2989] = 1.95, $p > .05$). With *number of feeders* entered first, a non-significant result was also obtained (F [1, 2989] = .005, $p > .05$). After controlling for *gender*, which was a significant predictor, the three peer substance use climate variables,

and school performance were all significant predictors of 7th grade alcohol use. These five predictor variables accounted for 33.3% of the variance in 7th grade alcohol use with nearly all of this variance accounted for by the three peer substance use climate variables. Neither of the transition variables was a significant predictor of 7th grade alcohol use.

7th Grade Marijuana

With only *transition time* entered into the equation, a non-significant result was obtained (F [1, 2993] = .10, $p > .05$). With only *number of feeders* entered into the equation, a significant result was obtained (F [1, 2993] = 12.42, $p < .001$, $R^2 = .004$). Number of feeder schools, the three peer substance use climate variables, and school performance were all significant predictors of 7th grade marijuana use. These five predictor variables accounted for 26.5% of the variance in 7th grade marijuana use with nearly all of this variance accounted for by the three peer substance use climate variables. Although number of feeder schools was a significant predictor, it accounted for less than 1% of the variance.

7th Grade Inhalant

With only *transition time* entered into the equation, a non-significant result was obtained (F [1, 2988] = .53, $p > .05$). With *number of feeders* entered first, a non-significant result was also obtained (F [1, 2988] = 3.40, $p > .05$). The three peer substance use climate variables were the only significant predictors of 7th grade inhalant use. These three predictor variables accounted for 25% of the variance in 7th grade inhalant use. Neither of the transition variables was a significant predictor for 7th grade inhalant use.

9th Grade Alcohol

With only *transition time* entered into the equation, a significant result was obtained (F [1, 4234] = 6.77, p = .01, R^2 = .002)). With only *number of feeders* entered into the equation, a non-significant result was obtained (F [1, 4234] = 3.77, p > .05). Transition time, the three peer substance use climate variables, attitude toward teachers, and school performance were all significant predictors of 9th grade alcohol use. These six predictor variables accounted for 34% of the variance in 9th grade alcohol use, with 33% of this variance accounted for by the three peer substance use climate variables. Although time of transition was a significant predictor, it accounted for less than 1% of the variance.

9th Grade Marijuana

With only *transition time* entered into the equation, a non-significant result was obtained (F [1, 4231] = .34, p >.05). With only *number of feeders* entered into the equation, a significant result was obtained (F [1, 4231] = 14.47, p <.001, R^2 = .003). After controlling for *gender* which was a significant predictor, number of feeder schools, the three substance use climate variables, attitude toward teachers, and school performance were all significant predictors of 9th grade marijuana use. These six predictor variables accounted for 34.2% of the variance in 9th grade marijuana use with nearly all of the variance accounted for by the three substance use climate variables. Although number of feeder schools was a significant predictor, it accounted for less than 1% of the variance.

9th Grade Inhalant

With only *transition time* entered into the equation, a non-significant result was obtained (F [1, 4218] = .11, p > .05). With *number of feeders* entered first, a non-significant result was also obtained (F [1, 4218] = .18, p > .05). After controlling for *gender* which was a significant predictor, the three substance use climate variables, attitude toward teachers, and school performance were all significant predictors of 9th grade inhalant use. These five predictor variables accounted for 19.8% of the variance in 9th grade inhalant use with nearly all of this variance accounted for by the three peer substance use climate variables. Neither of the transition variables was a significant predictor for 9th grade inhalant use.

CHAPTER V: DISCUSSION

The purpose of this study was to explore the factors associated with the potential for substance use, especially whether or not different types of school transitions affected the substance use of rural seventh and ninth graders. Even though the individual physical and emotional development of adolescents varies greatly, it was important to investigate whether school transitions (a change in physical environment, like transitioning to a higher level school) during early adolescence jeopardized an individual's ability to be protected from substance use, whether school adjustment was compromised, and whether there were increased associations with substance using peers. The two questions that guided this research were (1) Are there risks for students when they change schools during an already difficult developmental stage? and (2) If changing schools is systemically necessary, then when is the best time to make that transition and under what conditions? Findings in this study showed very little impact of school transitions. Conditions most conducive for school transitions are discussed with recommendations for future research.

Although gender was not part of the hypotheses, it was important to examine based on differences that may exist for males and females with regard to school adjustment, peer substance use associations and substance use. In reviewing the overall results, in addition to gender, it was also important to consider effects of the two grade

levels (7^{th} and 9^{th}), the type of transition (early vs. delayed) or (one feeder vs. multiple feeders), school adjustment, and peer substance use climate on substance use (alcohol, marijuana, and inhalants).

MANOVA Results

Findings on Gender Variables

Even though gender was included in each of the MANOVAs, findings were similar across each of the analyses, therefore, they are discussed in aggregate here. For both 7^{th} graders and 9^{th} graders, although gender is related to each of the predictor variables (school adjustment and peer substance use climate), 7^{th} and 9^{th} grade males and females experienced no difference in effect of school transitions on their use of substances independent of these variables. The only exception (close to significance) is noted for marijuana use for 7^{th} grade males. When taking into account the number of feeder schools, a male in a multiple feeder transition school reported higher levels of marijuana use than a male in one feeder transition schools.

Gender accounted for the same type of school adjustment effects that have previously been established in the literature for males and females (Simmons & Blyth, 1987; Simmons et al., 1987; Fenzel, 1989). Females tended to have higher school adjustment (attitude toward school, attitude toward teachers, and school performance) than males. Females also had different peer substance use climate effects than males. Females tended to have peers who established sanctions against substance use and males had peers who were more likely to encourage substance use. There were, however, no significant differences between males and females regarding the actual reported

substance use of peers. In other words, males did not report a greater number of substance using peers than females. Again, mirroring the results of previous literature (Van Etten, Neumark & Anthony, 1999), when examining substance use, females and males differed on level of use. Previous literature has historically reported males as having higher substance use but this may be due to males having greater exposure to opportunities for substance use than females (Van Etten, Neumark & Anthony, 1999). In this study, females reported using less alcohol and less marijuana than males. There were no significant differences in the use of inhalants between males and females. This lack of difference of inhalant use could be attributed to the relatively small number of inhalant users in this sample as compared to higher numbers of alcohol and marijuana users.

Hypothesis 1a – (Transition Time and School Adjustment- 7th Graders)

The time of transition did not have a significant effect on school adjustment for 7th graders. This hypothesis was not supported by the data.

Hypothesis 1b – (Transition Time and Peer Substance Use Climate - 7th Graders)

Time of transition did not have a significant effect on the substance use climate of peers for 7th graders. This hypothesis was not supported by the data.

Hypothesis 1c - (Transition Time and Substance Use - 7th Graders)

In examining the effect of transition time on 7th graders, there was no significant effect on substance use. In other words, when a student transitioned out of elementary school (at the end of fifth grade or at the end of sixth grade) did not effect their substance use. Only alcohol use approached significance with regard to time of transition (delayed, K-6) for 7th graders. This hypothesis was not supported by the data.

Hypothesis 2a – (Transition Time and School Adjustment - 9th Graders)

Time of transition had a significant effect on all three school adjustment variables for 9th graders although the percent of variance accounted for was only .004. Students who transitioned out of elementary school in the early (K-5) transition group showed somewhat higher school adjustment than students in the delayed (K-6) transition group. Reported attitude toward school, attitude toward teachers, and school performance were higher for early transition students than for students transitioning in the delayed transition group. This hypothesis was not supported by the data in that the direction of the effect was reversed from what was hypothesized.

Hypothesis 2b – (Transition Time and Peer Substance Use Climate - 9th Graders)

Time of transition had a significant effect on peer substance use climate for 9th graders with the exception of the effect of substance using peers although percent of variance accounted for was only .014. Students transitioning out of elementary school at the end of fifth grade reported somewhat higher peer sanctions against substance use and lower peer encouragement to use substances than students in the delayed (K-6) transition group. This hypothesis was not supported by the data in that the direction of the effect was reversed with regard to peer sanctions and peer encouragement to use substances. Transition time did not have a significant effect with regard to the number of peers using substances. In other words, time of transition for 9th graders did not effect the number of substance using peers.

Hypothesis 2c – (Transition Time and Substance Use - 9th Graders)

In examining the effect of transition time on 9th graders, there was a statistically significant effect for alcohol use although the percent of variance accounted for was only

.002. In other words, alcohol use was higher for students who experienced delayed transition out of elementary school (at the end of sixth grade). However, time of transition did not effect either marijuana or inhalant use. This hypothesis with regard to alcohol use was not supported by the data in that the direction of the effect was reversed. The higher use of alcohol was *not* seen in the students making the early transition at the end of fifth grade.

Hypothesis 3a - (Number of Feeders and School Adjustment - 7th Graders)

Number of Feeders did not have a significant effect on school adjustment for 7th graders. This hypothesis was not supported by the data.

Hypothesis 3b - (Number of Feeders and Peer Substance Use Climate - 7th Graders)

Number of Feeders had a significant effect on peer substance use climate for 7th graders. Students transitioning from one feeder transition school reported higher peer sanctions against drug use, lower peer encouragement to use drugs, and fewer associations with substance using peers than students in the multiple feeder transition group. This hypothesis was supported by the data although the percent of variance accounted for was only .006.

Hypothesis 3c - (Number of Feeders and Substance Use - 7th Graders)

In examining the effect of number of feeders on 7th graders, there was a significant effect on marijuana use. In other words, students who transitioned from one feeder school had less marijuana use than students in the multiple feeder transition group. This hypothesis was supported by the data for marijuana use, but not for alcohol or inhalant use, however, percent of variance accounted for was only .004.

Hypothesis 4a - (Number of Feeders and School Adjustment - 9th Graders)

Number of feeders did not have a significant effect on school adjustment for 9th graders. This hypothesis was not supported by the data.

Hypothesis 4b – (Number of Feeders and Peer Substance Use Climate - 9th Graders)

Number of feeders had a significant effect on peer substance use climate for 9th graders. Students transitioning from one feeder transition schools reported higher peer sanctions against drug use, lower peer encouragement to use drugs, and fewer associations with substance using peers than students in the multiple feeder transition group. This hypothesis was supported by the data although the percent of variance acounted for was only .005.

Hypothesis 4c - (Number of Feeders and Substance Use - 9th Graders)

In examining the effect of number of feeders on 9th graders, there was a significant effect on alcohol and marijuana use. In other words, students who transitioned from one feeder school transition reported less marijuana use and less alcohol use than students in the multiple feeder transition group. This hypothesis was supported by the data for marijuana and alcohol use, but not for inhalant use, however, percent of variance accounted for was only .004.

Summary of MANOVA Results - Transitions

These results suggest that there may be an effect for the time of transition, however, that effect may not emerge until a later period (at 9th grade and not at 7th grade). For example, only alcohol use approached significance for 7th graders, whereas, all of the school adjustment variables, peer sanctions against drug use, peer encouragement to use

drugs, and alcohol use were affected by time of transition for 9th graders. This could be attributed to developmental benchmarks that evolve at a slightly later point in time or that there is a cumulative effect that surfaces at the 9th grade. A delayed effect explanation appears to be most likely related to the effects of transition time. It should be noted that this effect is not due to some 9th graders making a new transition to high school since all 9th graders (in this sample) entered high school at the same time. This effect was controlled for by entrance into high school at the same point, and is therefore, due to the elementary (K-5 or K-6) school transition. However, these results must be treated with caution because although statistically significant, they do not account for meaningful amounts of the variance in substance use.

Number of feeders appear to have greater effect on 7th and 9th graders than time of transition. With the exception of school adjustment, use of inhalants and the use of alcohol for 7th graders, a multiple feeder school transition had a statistically significant effect on peer substance use climate for both 7th and 9th graders, increased marijuana use for 7th graders, an increased use of alcohol and marijuana for 9th graders. Again, however, these results should be interpreted with caution since the percentage of variance accounted for is very low, there are other factors not included in these models that have primary effects.

Hierarchical Multiple Regression Results

The remaining aim of the study was to determine whether time of transition (early [K-5] vs. delayed [K-6]) and number of feeder schools (one feeder vs. multiple feeders) were significant predictors of alcohol, marijuana, and inhalant use for rural 7th and 9th

graders after controlling for effects of gender, peer substance use climate variables, and school adjustment variables. Even though the largest percentage of variance was accounted for by the peer substance use climate variables for 7th graders, number of feeder schools was considered a statistically significant predictor even though it accounted for very little variance in marijuana use. This illustrates that for 7th graders the number of feeder schools had some small additional effect after taking into account the very large influence of peers. The timing of transitioning to another school was not significant for 7th graders on any of the dependent variables. However, a multiple feeder condition predicted 7th grade marijuana use. Again, the largest percentage of variance was accounted for by the peer substance use climate variables for 9th graders, and type of transition accounted for only a very small amount of variance in alcohol and marijuana use. Specifically, transition time was a significant (but not meaningful) predictor for 9th graders' alcohol use and number of feeders was a significant (but not meaningful) predictor for marijuana use. Neither transition time nor number of feeder schools was a significant predictor for inhalant use for 7th or 9th graders.

Findings from this study revealed that transitions (early vs. delayed *and* one feeder vs. multiple feeders) have a significant effect on substance use (alcohol and marijuana), but probably should not be interpreted as meaningful. Inhalants, however, did not show any effect from school transitions. Time of transition (early or delayed) had a very small effect only on 9th grade use of alcohol. Number of feeder schools had a very small effect on 7th grade alcohol use and 7th and 9th grade use of marijuana.

These results partially support (albeit weakly) previous research studies on the effect of school transitions as a predictor of negative impacts on students. However,

previous studies have almost exclusively examined school transitions with respect to achievement loss, school retention or developmental regression (measures of self-perception). Alspaugh (1998), found significant achievement loss for students making the transition from elementary school to a single middle grade school as compared to K-8 schools that did not have a transition beginning at seventh grade. The loss in academic achievement was even greater for students who transitioned from multiple elementary schools into a single middle school as compared to students who moved as a single cohort into middle school. In Alspaugh's research (1998) all three types of groups experienced a mean achievement loss at the transition to high school at 9th grade. Alspaugh's findings suggest that students placed in relatively small cohort groups for longer spans of time tend to experience more desirable educational outcomes.

Schiller's (1999) research on school transition focused on feeder patterns at the high school level with an analysis of mathematics grades as a measure of academic success. Ninth graders who received high math grades in middle school tended to receive higher grades if they attended the same high school with a *larger* proportion of their middle school classmates. These findings suggest that when large groups of students move between schools together, the stratification system tends to remain fairly undisturbed (Schiller, 1999). Feeder patterns may reinforce or weaken students' connection to peers that are part of the school's stratification system. The maintenance of social norms, obligations, and expectations among peers that were established during middle school may contribute to the stability of the educational structure (Coleman, 1988).

School transition research conduced by Crockett, Petersen, Graber, Schulenberg and Ebata (1989), on school adjustment was assessed based on course grades and self-image (a self-report instrument). Timing of school transitions and number of school transitions showed negative effects, with multiple transitions being especially stressful. Few gender differences were observed in response to early or multiple transitions, but those that did emerge suggested that girls may be more adversely affected with respect to self-image than boys.

Gender

Even though the present study did not reveal a significant interaction of gender in either type of school transition, gender did account for a small amount of the variance in the regression analyses. Although limited primarily to declines in self-esteem, previous studies have shown gender differences related to school transition. Simmons & Blyth (1987) found that females who changed schools as they entered seventh grade experienced a greater decline in self-esteem than males entering seventh grade or males and females who remained in K-8 elementary schools (Simmons & Blyth, 1987; Simmons et al., 1987; Crockett, et al., 1989). Fenzel (1989) also examined the sex differences as students transitioned to middle school. Measures of strain proportion (percentage of items endorsed on a scale) and magnitude were employed to investigate male/female differences in school transitions. Boys showed greater decline in strain level than girls, especially during the beginning of the transition phase.

Peer Substance Use Climate

Peer substance use climate variables accounted for the largest variance (19.2% to 32.7%) in this study for both 7th and 9th graders and for each of the three substances (alcohol, marijuana, and inhalants). This finding is highly consistent with previous research on peer associations and substance use (Jessor, et al., 1991; Oetting & Beauvais, 1987a,b; Chassin, 1984). According to problem-behavior theory, adolescents are at risk if they are unattached to their parents, are close to their peers, and are more influenced by their peers than their parents. In addition, adolescents are at increased risk if they have friends who use substances or if they believe their friends and parents approve of experimental substance use (Jessor, et al., 1991). Theories have been developed specifically around peer associations and substance use with Oetting and Beauvais' (1987a,b) development of peer cluster theory that incorporates psychosocial factors that create a potential for drug involvement or inoculate an adolescent against drug use. The peer cluster (group) shares beliefs, values, and behaviors that determine where, when, and with whom drugs are used and the role drugs play in defining peer cluster membership. Specifically, peer clusters are small groups in which drugs are made available; an adolescent learns to use drugs, shares beliefs, attitudes, values and rationales regarding drug use; and where drug use plays an important role in group membership and identification (Oetting & Beauvais, 1987a,b).

It is important to understand from results of this study that transitions were a statistically significant predictor of substance use, but did not have a large effect, even before controlling for peer substance use climate variables. An individual determination

must be made as to what is significant and what is meaningful in the interpretation of these research results.

School Adjustment

School performance for 7th graders and attitude toward school and school performance for 9th graders was impacted by school transitions. Again, this finding remains congruent with previous studies on school achievement and school transition. Seidman et al. (1994) linked problems experienced with school transitions to lowered student expectations of academic achievement, class preparation and consequently lower course grades. Harter, Whitesell, and Kowalski (1992) in school transition research from a middle school sample found increased emphasis on grades, competition, and performance evaluation with each subsequent grade, that focus on their own competence in addition to heightened social group comparisons. Several factors may help explain school adjustment attitudes that accompany the transition to a higher level school. Differing school structures and larger enrollments may present students with additional challenges in navigating a school system and finding a niche for themselves.

Implications for Timing of School Transitions

Although timing of school transitions does not appear to be a predictor of substance use, it is worth looking at in terms of additional adjustment for adolescents who are already experiencing other normative changes. Some educational systems have viewed problems related to transitions as inevitable at this stage of an adolescent's academic career and thus have taken the attitude to "just go with the flow" and do the

best they can under the circumstances. Others have examined research and have developed programs and school environments that are more conducive to less problematic transitions thereby easing the adjustment for students. Still others are more bound by the physical constraints of building capacities and staffing requirements and must balance the intellectual and emotional needs of students. The most important piece of information to remember from these findings is that although when and how a student transitions into a new school environment may have to be dictated by fiscal considerations – the attitudes of students about their schools, attitudes about their teachers, or the peer group they choose to "hang" out with are variables that can be addressed. We can attempt to make school environments more developmentally responsive to the needs of students by questioning whether school systems are doing everything they can when structural modifications are necessary.

Implications for Number of Feeder Schools

Multiple feeder schools funneling into a middle school is the most important school transition predictor of substance use in this study although the effects were much smaller than expected. From policy first developed in 1903, schools were organized to encourage larger numbers of elementary school students to remain in school by maintaining the structure of social closeness found in the primary grades (Smith, 1997). A century later, we are still experimenting with different systems to achieve a nurturing school environment. For most of this century, the most common middle school reform has been to alter grade span (Smith, 1997). Currently in the U.S., schools enrolling seventh graders offer approximately 30 different combinations (Epstein & Mac Iver,

1990). If the intention is to obtain optimal student learning, we may be focusing on a *pattern* when a more critical factor is the *nature* of the school environment and not the grade span configuration or the timing of the transition. When the nature of the environment is not disturbed and students are more closely connected with peer networks and with their teachers there may be less likelihood for substance use and other deviant behaviors.

The nature of multiple feeder schools also changes the dynamics for parents as well. The larger, less homogenous groups that students are put in increases the likelihood that parents will not be familiar with their children's friends or the parents of their children's friends. When parents are unable to "track" or monitor their children's peers or make connections with other parents, there is diminished opportunity to impose sanctions for inappropriate behaviors. Families, like schools, are confronted with a difficult problem: providing an environment that changes in the right way and at the appropriate time (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan & Mac Iver, 1993).

Implications for Rural Schools

Despite a past subjected to criticism and highlighted by efforts to consolidate, rural school districts continue to endure – serving about one-third of the nation's students (Spears, Bailey & Maes, 1992). Rural schools are often seen as vestiges of strong community support with more flexible organizational structures and therefore, more able to explore educational change. However, education change in rural communities has often reflected the trends of mass society with institutional specialization and separatism.

Rural schools have become more incorporated into a national system and less attune to local needs and circumstances. Public policies have encouraged school consolidation to make rural schools larger and more like urban schools (Hobbs, 1992). It is important then that rural schools be vigilant in their concern for the intellectual and emotional needs of its students while maintaining the integrity of the community culture with available resources.

Unfortunately, as a growing proportion of school funding comes from state and federal sources, it causes local schools and governing boards to pay attention to the sources of those funds while trying to manage local budgetary demands. Funding concerns are an inevitable reality for most school districts and frequently limit options for rural schools as well. All these influences compete for the attention of the rural community and make it more difficult to retain a strong sense of who they are as a community (Hobbs, 1992). Rural communities have a responsibility to concentrate on the individualism that is part of their history and constitution while avoiding pressures to emulate "big city" schools and mass education. Consolidation can threaten the loss of a community centerpiece and a portion of the community identity (Hobbs, 1992). At the same time, consolidation may be necessary to the fiscal welfare of a school district, but may create a multiple feeder school system that can dilute its students' protection from the risk of deviant behaviors. Rural schools and communities also have an additional responsibility to implement practices that make school transitions more student friendly while building and encouraging the culture of the school community.

The results of this study indicate that, in general, the way in which students transition to new schools may have a small effect on risk for use of substances, especially

marijuana. Regardless of the configuration of grade span, students should not be plunged into inappropriate learning environments without adequate support for these changes in school environments. This may involve better integration of students into new buildings along with a plan to address the culture of the school environment. What has worked with the transitioning of younger elementary students into more cohesive groups could also be applied to students in high school settings. Is it possible to duplicate a "middle schoolness" into a high school environment? This is an issue that may need to be addressed to facilitate school transitions.

The most sensible approach is to develop policies around transitions, especially multiple feeder transitions. The disruption in peer and teacher networks may be far more debilitating when a student is transitioned with students from multiple schools - more so than the point in time when a student is transitioned out of elementary school with regard to school adjustment, peer substance use, and their own substance use.

Limitations of the Study

In addition to the limitations noted in Chapter One, the following limitations became evident as a result of conducting the research for this study. The sampling design was constructed to draw a representative sample of rural communities in the U.S. However, a very small sample was drawn from the Northeast region because of the lack of small rural populations in that area. Most Northeast rural communities are in close proximity to larger, more urban communities and hence did not meet the rural classification criteria. Unfortunately, the Northeast communities that did meet the rural classifications did not subsequently fit the grade criteria for feeder schools. Additionally,

many rural schools in other regions did not experience school transitions because of a lack of multiple school buildings. For example, rural communities often have one school for intermediate/middle school (K-8) and one school for high school students (9-12) or only one school (K-12). Unfortunately, this criterion eliminated many rural schools from the random sample, which may have led to some unidentified bias in the sample.

Recommendations for Future Research

Overall, the results of one feeder school versus multiple feeder schools from this study suggest the need for additional research to examine school size as a factor in the impact of school transitions. Do larger schools where there is increased opportunity for disruption of peer networks present additional stresses in school transition for students? In addition to factors related to school size, it may be beneficial to examine community size factors as well as community conditions or elements that may contribute to the influences of community culture. And is the ethnic culture of a community a risk or protective factor in school culture?

It may also be instructive to compare substance use in rural schools where there are few (K-8) or no transitions (K-12) with schools with multiple transitions. And a more detailed investigation could examine "middle schoolness" in terms of actual adherence to signature practices considered to be the best programs for students in the middle grades and not just containing the title "middle school".

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APPENDIX A

COMMUNITY DRUG AND ALCOHOL SURVEY (CDAS)

COMMUNITY DRUG AND ALCOHOL SURVEY (CDAS)

Demographics

1. What grade are you in?

O	O	O	O	O	O	O	O
5	6	7	8	9	10	11	12

2. Sex:

O Male
O Female

Substance Use (alcohol)

3. How often in the last month have you...

	None	1-2 times	3-9 times	10-19 times	20 or more times
Had alcohol to drink?	O	O	O	O	O

4. How do you like to drink?
   - O I don't drink.
   - O Just a glass or two.
   - O Enough to feel it a little.
   - O Enough to feel it a lot.
   - O Until I get really drunk.

5. In using alcohol, are you a...

Non-User	Very Light User	Light User	Mod-erate User	Heavy User	Very Heavy User
O	O	O	O	O	O

Substance Use (marijuana)

6. How often in the last month have you used marijuana?

O None
O 1-2 times
O 3-9 times
O 10-19 times
O 20 or more times
O Several times every day

7. How have you used marijuana? Mark all that apply.

O I have not used it.
O Smoked it.
O Eaten it.
O Used a "bong" or other equipment.
O Used sinsemilla.
O Used hashish (hash).

8. In using marijuana, are you a...

Non-User	Very Light User	Light User	Mod-erate User	Heavy User	Very Heavy User
O	O	O	O	O	O

Substance Use (inhalants)

9. Have you used inhalants ("Sniff" or "huff" something like glue, gas, paint, etc.) to get high during the last month?

No	1-2 times	3-9 times	10-19 times	20 or more times
O	O	O	O	O

10. Have you ever "sniffed" (or "huffed") something like glue, gas, paint, etc. to get high? (Do NOT include cocaine).

O Yes
O No

11. In using inhalants ("Sniff" or "huff" something like glue, paint, gas, etc.), are you a...

Non-User	Very Light User	Light User	Mod-erate User	Heavy User	Very Heavy User
O	O	O	O	O	O

Peer Substance Use Climate (peer sanctions)

12. How much would your friends try to stop you from getting drunk?

A Lot	Some	Not Much	Not at All
O	O	O	O

13. How much would your friends try to stop you from....

	A Lot	Some	Not Much	Not at All
Using marijuana?	O	O	O	O
"Sniffing" or "huffing" glue, gas, etc. (inhalants)?	O	O	O	O

Peer Substance Use Climate (peer encouragement)

14. How often have your friends asked you to get drunk?

A Lot	Some	Not Much	Not at All
O	O	O	O

15. How often have your friends asked you to use...

	Very Often	Some	Not very Often	Not at All
Marijuana?	O	O	O	O
Inhalants ("Sniff" or "huff" glue, gas etc.)?	O	O	O	O

Peer Substance Use Climate (peer use)

16. How many of your friends do each of the following...

	None	A Few	Most of Them	All of Them
Get drunk?	O	O	O	O
Use Marijuana?	O	O	O	O
"Sniff" or "huff" glue, gas, etc. (inhalants)?	O	O	O	O

School Adjustment

17. How much do you agree with each of the following?

	A Lot	Some	Not Much	Not at All
I like school.	O	O	O	O
School is fun.	O	O	O	O

18. How much do you agree with each of the following?

	A Lot	Some	Not Much	Not at All
I like my teachers.	O	O	O	O
My teachers like me.	O	O	O	O

19. What kind of grades do you get?

O Very good
O Good
O Not too good
O Poor

20. What kind of student are you?

O Very good
O Good
O Not too good
O Poor

APPENDIX B

SURVEY INSTRUCTIONS

Instruction Packet for Coordinators and Teachers

Colorado State University

INSTRUCTIONS FOR SURVEY COORDINATOR

✓ VERIFY YOUR SHIPMENT. Check the NUMBER OF SURVEYS against the number of students who will fill out the surveys. Make sure you have enough surveys for each class. Please call us at 1-800-835-8091 immediately if there is a shortage.

✓ SELECT THE DAY to survey. Try to pick a day when attendance will be normal or high. Avoid days when a particular group will be absent from school (i.e. field trips, out-of-town sporting events, etc.). Your goal is to survey as many students as possible all on the same day. DO NOT attempt to survey absent students at a later date; this may cause invalid results.

✓ ANNOUNCE the upcoming anonymous survey to students and parents (see attached *Student Brief* and *Parent Letter*). Note: *Notice to Parents* is for school use ONLY and SHOULD NOT be returned to Colorado State University.

✓ INFORM PARENTS about the survey by one of the following methods; an article in the local or school newspaper, an announcement on a local radio station, posting the *Parent Letter* (with permission) in public locations (i.e. grocery store bulletin boards, merchant windows, etc.).

✓ Because THE SURVEY must be completed with a #2 pencil, be sure to have an adequate supply available.

✓ COPY AND DISTRIBUTE *Instructions for Teachers* (blue forms) to each of the participating teachers, then meet with them to explain the purpose of the survey. Emphasize that this procedure protects student confidentiality. If a meeting is not possible, distribute the written information to each teacher before the administration date, giving them enough time to come to you with questions.

✓ ATTACHED is a *SURVEY CHECKLIST* (pink form) for listing each participating teacher's name so that you can track who has/hasn't returned the surveys after administration. If you're coordinating this effort in several schools, prepare a checklist for each school.

✓ The DAY BEFORE the surveys are to be administered, DISTRIBUTE THE SURVEYS to each teacher. Have extra *Instructions for Teachers* on hand in case teachers have misplaced their copies. Give each classroom an adequate number of 10x13 labeled envelopes (1 envelope per 30 students) for the return of completed and unused surveys. To provide your school with accurate and prompt results, please make sure all envelopes are labeled with the school district name, school name, teacher name, class period/room#, grade, city, and state.

RETURNING THE SURVEYS TO US

✓ AFTER EACH CLASS completes the survey, the envelopes with the SURVEYS SHOULD BE RETURNED TO THE COORDINATOR (labeled and sealed in the provided envelopes). Unused surveys should also be returned.

✓ CHECK THAT ALL participating classrooms have returned their envelope(s) so that all surveys are returned to us in one shipment. (Multiple shipments increase the chance of incomplete reports.)

✓ SEND both pages of the *Survey Transmittal Letter* (green forms) with the survey envelopes. Please review the information contained in the *Survey Transmittal Letter* before returning. Does it include the most current number of students enrolled in each grade? Is the school name(s) listed exactly as you want it to appear in the report? This letter must be returned in order for the surveys to be processed and a report generated.

✓ If your shipment requires MORE THAN ONE BOX, include an identification sheet inside **each** box of surveys, listing the primary contact person's name, address, city, state and grades surveyed, and the complete name of the school and school district. It also helps to label each package "Box 1 of 3," "Box 2 of 3" etc.

✓ KEEP IN MIND that boxes are tossed in all directions during shipping. Loose surveys may be damaged, or mixed together, which can invalidate the results. Pack in such a way that surveys from separate schools cannot be mixed together. Leaving them in the labeled envelopes from the individual classrooms will ensure

this separation. If a box is not completely full, add packing materials (bubble wrap, styrofoam, or even wads of paper) to ensure that the surveys arrive in good condition.

✓ Please DO NOT READ the completed surveys. This violates the confidentiality that has been assured to all students who participate, and will invalidate the process. DO NOT attempt to determine which surveys are "valid" or "usable." Our systems are designed to eliminate those surveys which cannot be scanned and/or are invalid.

✓ Affix a FedEx Airbill label to the top of each box that you are returning to the Tri-Ethnic Center (your school has been provided the number of Airbills you will need based on the number of surveys sent to you). Instructions for using Airbills are printed on the back of each Airbill. When your packages are ready for shipment, call FedEx at 1-800-463-3339 and they will arrange to have them picked up. Shipment charges will be billed to the Tri-Ethnic Center.

If you have any questions, please call the Tri-Ethnic Center for Prevention Research at1-800-835-8091.

CLASSROOM PARTICIPATION CHECKLIST ✓

School Name _____

		✓	✓	✓
Teacher	Class Period/ Room #	Instructions Distributed	Surveys Distributed	Surveys Returned

INSTRUCTIONS FOR TEACHERS
(Read Before Administering Survey)

GENERAL INFORMATION

The manner in which the surveys are administered to the students is very important in insuring that the data collected are scientifically meaningful and useful. Your cooperation is critical to the success of this project and is greatly appreciated.

In order to guarantee the best possible results from the survey, it is necessary that the procedures are followed and the instructions are the same in every classroom. These procedures have been used hundreds of times in different schools all across the country and will lead to valid survey data. The following information will be helpful in administering the survey.

♦ Surveys must be filled out with #2 pencils. Make sure you have enough #2 pencils and surveys for your class.

♦ DO NOT pass out the surveys to students until told to do so in the *Instructions to be Read to Students.*

♦ Before the survey is administered, write on the chalkboard "YOU HAVE _____ MINUTES REMAINING ON THE SURVEY." Write down the amount of time remaining at 15 minute intervals. Announce when there are only 5 minutes remaining.

♦ The time necessary to answer the questions in the survey is about 45 minutes. It will take approximately 6 minutes to read the directions to the students. Allow enough time for students to complete the entire survey within one class period. If students do not finish by the end of the period, have them turn in their surveys anyway.

♦ Read the *Instructions to be Read to Students* aloud. It is important for students to know that their answers are strictly anonymous and that they do not have to answer any questions they do not wish to answer.

♦ While students are filling out the survey, remain in one area of the classroom where you cannot see how any student is answering the survey questions. Do not walk around among the students while the survey is being completed.

♦ Try to briefly answer any questions that come up during the survey administration without going into great detail. Students should not spend a lot of time on any one question. Have the student leave an item blank if he or she is having difficulty answering it.

♦ Assure the students that their responses are completely anonymous and the results of the survey are entirely confidential. The data collected will be used for national scientific research.

♦ In cases where a student has elected not to participate in the survey or where a parent has indicated that they do not want their child to participate, that student may be given alternative work or excused from the classroom.

♦ Disruptive behavior (such as joking, laughing, etc.) may influence other student responses to the survey. Attempts should be made to minimize these distractions.

♦ To collect the surveys after each student has finished, pass around the provided envelope (approximately 30 surveys per envelope) and have the students put their forms inside the envelope in any order. Do not read the survey responses.

♦ Return all completed surveys and blank surveys in the labeled envelope provided. Complete the information on the envelope label and seal the envelope. Give all envelope packets to the person at your school who is coordinating the survey project. After the survey information is entered by the Tri-Ethnic Center for Prevention Research at Colorado State University, the survey forms will be destroyed.

♦ Teachers are to read ORALLY the words in **bold print** from the *Instructions to be Read to Students*.

COMMON STUDENT QUESTIONS

The following are examples of questions that students may ask when taking the survey. Be prepared to answer questions, but do not volunteer information unless questions are brought up by the students.

Q: Do I have to put my name on the survey?
A: No. Do not put your name anywhere on the survey. The survey is completely anonymous.

Q: Do I have to answer all these questions?
A: No. Leave the questions you can't answer or don't want to answer blank.

Q: Will I get into trouble for any of my answers?
A: No. There is no way that anyone will ever know which survey is yours.

Q: What is (*name of drug*)?
A: Just answer the question "no" or leave it blank if you don't know that particular drug.

Q: Does it count as "using" or "trying" alcohol if I've had wine in a religious ceremony?
A: No. Do not count that as "using" or "trying" alcohol.

INSTRUCTIONS TO BE READ TO STUDENTS

Teachers are to read ORALLY the words in **bold print**. DO NOT pass out the surveys yet.

We have been asked to participate in a nationwide survey. It will compare attitudes and activities of youth in rural areas to that of youth in metropolitan communities. Your participation in this survey is completely voluntary. Your responses are completely anonymous. The confidential results will be used for scientific research. Your name should not be written anywhere on the survey pages. The survey must be filled out with a #2 pencil. Erase any stray marks that you make. *Pass out #2 pencils if necessary. (Pause)* **I will now read the instructions to you.**

Do not spend a lot of time on any one question. Leave any question blank if you do not know the answer to it or if you do not want to answer it. If the question asks about a particular drug that you are not familiar with, answer that question with a "no". Please be honest. You are to work through the entire survey booklet without stopping. Do not put your name or other identifying marks on any pages.

You will have about _____ *(the rest of the class period)* **minutes to complete the survey. Please work quickly but accurately. I will write down the time remaining on the board** *(at 15 minute intervals, then the last 5 minutes).*

When everyone is finished filling out the survey, I will pass around a large envelope. Put your survey in the envelope. Teachers and staff at our school have been instructed not to open envelopes or to read responses. The envelopes will immediately be sealed and not opened until they reach Colorado State University. At the research center, the data from the anonymous survey responses will be entered and the forms will then be destroyed.

If you finish early, please remain quietly seated. Are there any questions?

I'll begin handing out the surveys now. You may begin as soon as you receive a survey. *(Pass out surveys)*

STUDENT BRIEF

Our school has been selected by Colorado State University to participate in a nationwide project that will help communities develop programs and activities to help youth. Students at our school will be taking an anonymous survey that will ask questions about your attitudes and activities. The confidential results will be used for scientific research. Your name will not be on any part of the survey. The surveys will be sent to the research center at Colorado State University where the data will be entered and the forms will then be destroyed.

This transmittal letter and the attached enrollment form must be returned with the completed surveys in order for the surveys to be processed and a report generated.

SURVEY TRANSMITTAL LETTER

DATE:_____

TO: Tri-Ethnic Center for Prevention Research
Psychology Department
Sage Hall
Colorado State University
Ft. Collins, CO 80523-1879

FROM:

Contact name: _____

Title: _____

Phone Number: _____

School Name: _____

District Name: _____

Street Address _____

_____

City, State, Zip _____

COMMENTS _____

_____

_____

IMPORTANT!
Please send all surveys to be included in the report in one shipment. Place a copy of this Survey Transmittal Letter in *each box*.

ENROLLMENT

Please provide the enrollment information requested below for each school participating in the survey.

School Name and Address

(as it will appear in report)

_____ Grade _____ Enrollment _____
_____ Grade _____ Enrollment _____
_____ Grade _____ Enrollment _____
_____ Grade _____ Enrollment _____

_____ Grade _____ Enrollment _____
_____ Grade _____ Enrollment _____
_____ Grade _____ Enrollment _____
_____ Grade _____ Enrollment _____

_____ Grade _____ Enrollment _____
_____ Grade _____ Enrollment _____
_____ Grade _____ Enrollment _____
_____ Grade _____Enrollment ____

Which of the following methods of communication did you use to inform parents about the survey?
Local Newspaper _____ Radio _____ School Newspaper _____
Posting of *Parent Letter* _____ (If you checked posting, please identify all locations where the *Parent Letter* was posted:
_____

IMPORTANT!
Please send all surveys to be included in the report in one shipment. Place a copy of this Survey Transmittal Letter in *each box*.

APPENDIX C

PARENT CONSENT LETTER

PARENT LETTER

THIS LETTER CAN BE COPIED DIRECTLY ON YOUR SCHOOL LETTERHEAD FOR SENDING TO PARENTS.

Dear Parent:

As you may know, our school has been selected by Colorado State University to participate in **a study of adolescent drug use and related problems**. The ultimate goal of the project is to gather information that will help communities develop programs and activities to help reduce drug use among youth. The project is funded by an agency of the federal government (National Institute on Drug Abuse).

In a few days, students at our school will be taking an anonymous survey to find out the extent of alcohol and drug use and related problems among the youth in our community. The survey to be used is called The Community Drug and Alcohol Survey. It was developed after more than a decade of research by prevention specialists at Colorado State University who are nationally recognized for their work in the drug and alcohol field. Over one million students nationwide have taken this survey. The confidential information collected will be provided to our school district by grade only. The survey is **anonymous** and your child's name will not appear anywhere on this survey or in any report.

This information **can help our school staff** in the evaluation of current drug prevention programs and in planning new programs.

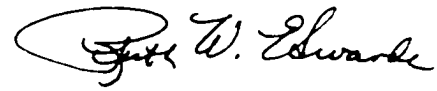
The survey contains questions that ask students about their attitudes and activities regarding alcohol and drug use, along with factors that may relate to substance use, such as how they feel about school and the community; their experience with violence, victimization, and crime and their attitudes and those of their friends about drug use. Students will take the survey at school during a regular class period under carefully established conditions to protect their anonymity. **The students are not identified individually in any way.** They **do not** write their names or any other identifying information on the survey.

The questions asked are standard ones that have been asked of thousands of students across the country. Risks are very minimal to your child in participating in this activity. In the unlikely event that your child should become distressed about answering the questions, the classroom teacher will take appropriate action to assist your child.

After they have filled out the surveys, the surveys will immediately be sealed in envelopes and shipped to Colorado State University where the results will be compiled. **No one, not even school staff, will ever know how any individual responded to the survey.** The survey forms will be destroyed once the data have been entered. At any time, you or your child have the right to terminate participation in this survey.

If you **object** to your child's filling out the survey, **please sign the enclosed form and return it to the school**. If you change your mind after you have signed the form, call the school and your child will be allowed to take the survey. You may also call the school to tell them you do not want your child to take the survey instead of sending the form back to school with your child. If you wish to see the survey before giving your permission for your child to participate, a copy of the survey is available at the school for this purpose.

At any time, you or your child have the right to stop participation in this project without causing any trouble for you or your child.



School Representative

Ruth W. Edwards, Ph.D.
Project Director
Colorado State University
Ft. Collins, CO 80523-1879 Phone: 1-800-835-8091

APPENDIX D

PARENT NOTICE

NOTICE TO PARENTS

Because your child is a minor we are asking you, as parent or guardian, to read the attached letter which contains information about the survey to be given in our school. If you **do not want** your child to take the survey, please sign below and return this form to the school before the day of the survey. You may also call the school to tell them you do not want your child to take part in the survey.

Please remember that the information from the survey will never identify your child or your family. No names are put on the survey. Also, participation is **voluntary** and you and/or your child have the right to refuse to complete the survey at any time.

If you **do not want** your child to participate in the survey please sign below and return this form to the school. This is a voluntary activity and your child will not be penalized for not participating.

We will assume that if you do not return this form we have your permission for your child to participate anonymously in the survey. Your child has the right to not answer any questions that he or she does not want to answer and can decide not to take the survey even while it is being given.

If you have any questions about this project, you may call the Project Director, Dr. Ruth Edwards at 1-800-835-8091.

Your child's participation in the survey would be extremely helpful in expanding the research and in increasing the understanding of the types of problems youth are experiencing and how we can best help them deal with these issues. We believe that the youth in our community will benefit by having as many students as possible take this survey so that the information we base our programs on is accurate.

_____
Child's Name (Please Print)

I DO NOT want my child to fill out The Community Drug and Alcohol Survey.

_____
Signature of Parent or Guardian Date

Remember, **you do not need to sign and return this form if you do not object** to your child taking part in the survey.

Thank you for your time.