






**Improving the Odds:**

# *The Untapped Power of Schools to Improve the Health of Teens*



*When students feel they are a part of school,  say they are treated fairly by teachers, and feel close to people at school, they are healthier  and more likely to succeed.*

*What promotes this connectedness to school? Well-managed classrooms,  small school size and integrated friendship groups.*

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*Introduction.....4*

---

*The Answers So Far.....8*

---

*Conclusion.....16*

---

*Epilogue.....17*

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# Introduction

*Schools have enormous influence on teenagers.*



*Schools are*

*where formal learning takes place. Schools are also the center of most*

*teenagers’*



*social lives – where they find most of their*

*friends and develop friendships.*

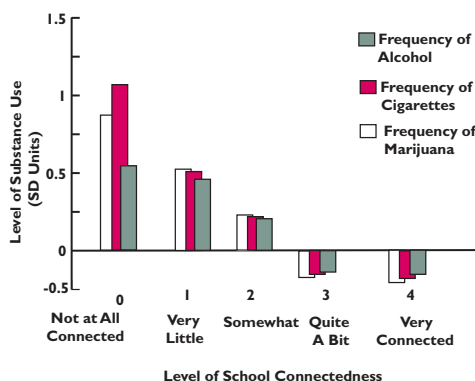
Along with the family, schools are where most adolescents are socialized into adulthood. Kids enter middle school and high school representing a wide developmental range. They are tall or short, young or old for their grade.

Many come with enormous encouragement from home. Others come with great family burdens. Still others come hungry, abused, or depressed. No matter what their background, middle and high school students all need to accomplish the same developmental tasks. They all need to

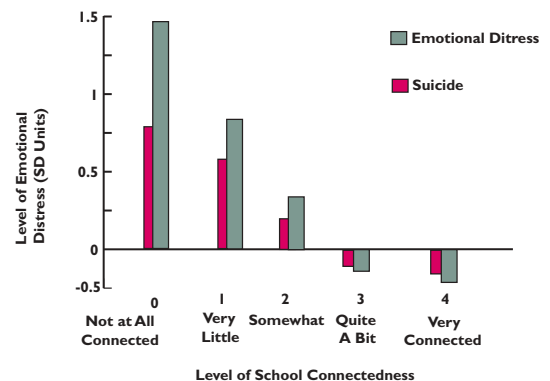
Three of these charts use measurements referred to as Standard Deviation Units (SD Units). This is a researcher’s way of ensuring that data from different sources are compared accurately.

The value of “0” represents the average level among students. Negative numbers indicate below-average, positive numbers indicate greater than average.

**Students Who Feel Connected to School are Less Likely to Use Substances**



**Students Who Feel Connected to School Experience Less Emotional Distress**



successfully navigate adolescence and the transition to adulthood. By default or design, many behaviors and attitudes that are learned and cultivated in schools have consequences that survive into adulthood.

When middle and high school students feel cared for by people at their school and when they feel like they are part of school, they are less likely to engage in unhealthy behaviors. When they feel connected to school they also report higher levels of emotional well-being.

In an earlier study, researchers at the University of Minnesota learned that school connectedness is a powerful protective factor. Their research showed that students who feel connected to school:

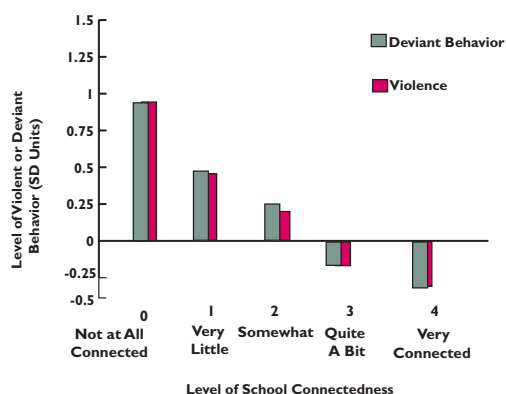
- are less likely to use alcohol and illegal drugs;

- are less likely to engage in violent or deviant behavior;
- are less likely to become pregnant;
- are less likely to experience emotional distress.

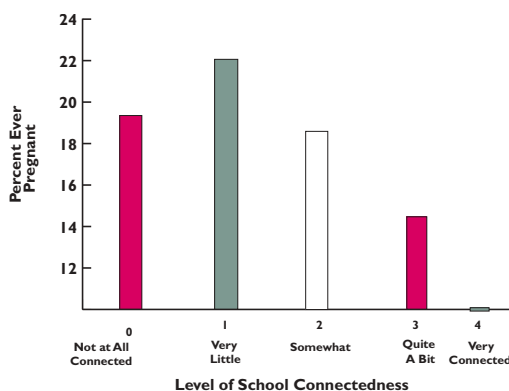
Other researchers have found that students respond better to efforts to improve academic performance when they feel connected to school.

Since school connectedness is associated with a lower prevalence of so many unhealthy behaviors, two teams of researchers examined the questions, “What contributes to a teen’s feeling of connectedness to school? Why do some adolescents feel attached to school while others do not? What individual and school characteristics predict the

**Students Who Feel Connected to School Engage in Less Violent or Deviant Behavior**



**Students Who Feel Connected to School Are Less Likely to Become Pregnant**



sense of belonging that protects our students from risky health behaviors? How does the overall pattern of friendship networks influence a feeling of connectedness? What role does an individual’s popularity play?”

These are the questions this report answers.

### Big Questions, Big Study

The information reported in this monograph is based on data from the National Longitudinal Study of Adolescent Health (Add Health). During the 1994–1995 school year, over 90,000 adolescents in grades 7 through 12 were surveyed in school in 80 different communities around the country. A survey was also administered to school administrators in these communities.



Together, these surveys provide detailed information about student friendships, extra-curricular activities during or after school, student attitudes, discipline policies, teacher qualifications, the demographic make-up of schools, and structural characteristics including school size, class size, and whether the school is public or private, urban, suburban, or rural. Also included in Add Health are individual attributes including race/ethnicity, family structure, grade point average, measures of classroom behaviors, and school attendance. (See sidebar, *The National Longitudinal Study of Adolescent Health*, for more details on the survey.)

The findings reported here come from two related studies that looked at what fosters school connectedness. The researchers considered nine school factors:

- **Classroom management**
- **School demographic composition**
- **School size**
- **Class size**
- **School type — public, private or parochial**



- Discipline policies
- Rates of participation in extracurricular activities
- Teacher qualifications
- Friendship groups among students in the school

## THE NATIONAL LONGITUDINAL STUDY OF ADOLESCENT HEALTH

The Add Health Study, from which this data comes, is a comprehensive school-based study of the health-related behaviors of adolescents in the United States. Between September, 1994 and April, 1995 more than 90,000 students in grades 7 through 12 attending 132 schools around the United States answered brief questionnaires about their lives, including their health, friendships, self-esteem, and expectations for the future. Parents had to give their permission through procedures approved by each school.

Administrators from participating schools also completed a questionnaire dealing with school policies and procedures, teacher characteristics, health service provision or referral, and student body characteristics. School information was updated in a telephone interview in the spring of 1996.

All students who completed the in-school questionnaire, plus those who did not complete a questionnaire but were listed on a school roster, were eligible to be sampled for an in-home interview. Over 20,000 in-home interviews of students were conducted between April and December of 1995 (Wave I).

This in-home sample is composed of both a nationally representative core sample (approximately 12,000) and a dozen special samples that can be used to examine questions in groups that would otherwise be too few in number for analysis (for example, twins, Cuban Hispanics, and disabled young people). All data were recorded on laptop computers, and sensitive questions were asked privately using a pre-recorded audiocassette.

A follow-up (Wave II) of over 15,000 adolescents, interviewed again at home, was conducted between April and August of 1996. A parent of each adolescent who was interviewed, usually the mother, was asked to complete an interview as part of Wave I. Eighteen thousand parent interviews were completed (approximately 85% of all adolescent participants).

The Add Health Study was directed by J. Richard Udry and a team of adolescent health researchers at the University of North Carolina at Chapel Hill.

# The Answers So Far

*Most students in most schools across the country feel pretty connected to school.*



*They feel an attachment to their friends and teachers.*

This is good news. The average level of connectedness across all schools was 3.6, out of a possible range of 1 to 5.

Still, 31 percent of students do not feel connected to school. Those who are not connected — who are disengaged — are more likely to smoke cigarettes, have early sexual intercourse, or become involved in weapon-related violence.

Developing policies and programs that promote school connectedness is a good educational strategy and a good public health strategy. The challenge is to understand what promotes school connectedness.

## Classroom Management

Good classroom management leads to higher school connectedness and all of the benefits that flow from it. It is more important than teacher experience, class size, or teachers having a Master's degree. This is the central finding of these studies.

In a school with well-managed classrooms, students get along with each other and the teacher, are engaged in learning, and complete homework assignments.

The state of classroom management in a school was measured from responses to four questions “How much trouble do you have:

- ... getting along with other students?
- ... getting along with teachers?
- ... completing your homework?
- ... paying attention in class?”

On average, students reported having trouble in one or more of these areas on a weekly basis. Clearly, classroom management is an issue in most middle schools and high schools.

Intervention research has demonstrated that classroom management can be dramatically improved by giving teachers concrete strategies for engaging and disciplining students and by the administration supporting use of these strategies throughout the school.





### Measuring School Connectedness\*

School connectedness was measured based on responses to five questions:

“How strongly do you agree or disagree with each of the following statements:

- I feel close to people at this school.
- I am happy to be at this school.
- I feel like I am part of this school.
- The teachers at this school treat students fairly?
- I feel safe in my school.”

Students responded on a 5-point scale from “strongly agree.”

*\*The first three questions were used for the Moody and Bearman analysis of friendship groups. This scale is called “school attachment.” All five questions were used for the McNeely, Nonnemaker and Blum analysis. This scale is called “school connectedness.”*

### A PROFILE OF AMERICAN MIDDLE AND HIGH SCHOOLS

The Add Health Study includes samples of just about every type of middle school and high school across the country. Taken together, the schools in Add Health are representative of all schools in the United States, including public, private and parochial schools.

Add health data show that:

- Most schools (83%) are public schools.
- The average school size is around 650 students; however, there is a big range in size, from 25 students to over 5,000.
- The average class size is just under 23 students, with a range from 10 to 39 students in a class.
- More than two-fifths (42%) of teachers have their Master’s degree.
- The average school has about one in eleven teachers who are in their first year of teaching at the school.
- Most students (83%) participate in at least one extracurricular school activity – either during the school day or after school – but the range is huge, from 100% participation to 41%.
- Nearly 38% of schools give out-of-school suspension the first time a student is caught smoking.
- Four percent of schools give out-of-school suspension the first time a student is caught cheating.

Well-managed classrooms are most likely to exist when:

- **The school sets clear expectations for individual responsibility and conflict resolution among students;**
- **Teachers consistently acknowledge all students;**
- **Students participate in the management of the classroom — they do regular jobs, have input on classroom rules and help set grading criteria.**



## School Composition

Students feel more connected to school when friendship groups are racially integrated. However, the researchers found that when a school is racially integrated, friendship groups within a school tend to be racially segregated.

Apparently, students prefer to form friendships with young people of their own race. When there are enough students of each racial group to form friendships with peers of one's own race, racial groups tend to isolate themselves from one another along racial boundaries. When this occurs, overall connectedness declines (see sidebar *Mapping Friendship Groups*).

This finding was not true for all schools. There were a few schools with large numbers of both African American and White students and integrated friendship groups. But these were the exception.

Clearly, there is a need to go beyond our current integration practices, which focus on numeric integration of the school as a whole and neglect integration within a school. For example, to the extent that minority students are disproportionately assigned to lower-track classes, school policies can unintentionally exacerbate the segregation of friendship groups.

## School Size

Students in smaller schools feel more connected to school, on average, than students in larger schools. This finding contributes to the mounting evidence that very large schools are not good for engaging kids in school.

The effect of school size on connectedness is not the same as the effect of school size on academic achievement. The optimal school size for increasing school connectedness is under 600 students. In small schools, teachers and school leaders can personally connect with most students, an impossible feat in a large school.

On the other hand, studies on learning report that the optimal high school size for high academic achievement is between 600 and 1,200 students. Schools of this size have the capacity to offer a wide variety of courses and curricula. Nonetheless, the findings support the growing evidence that very large schools, those over 1,200, are not good environments for adolescents either educationally or socially.

## Measuring School Environment

### Demographic Composition

Percent of students who are Latino.

Percent of students from two-parent families.

### Teacher Qualifications

Percent of teachers in their first year of teaching at the school.

Percent of teachers with a Master's degree.

### Discipline Policies

Students receive out-of-school suspension or expulsion the first time they are caught cheating (yes/no). A scale was created based on administrator responses to ten questions. "In your school, what happens to a student who is caught:

Possessing alcohol?	Verbally abusing a teacher?
Drinking alcohol?	Fighting?
Possessing an illegal drug?	Injuring another student?
Using an illegal drug?	Carrying a weapon?
Destroying school property?	Injury to a teacher?"

The responses ranges from "1" (no policy) to "7" (expulsion). Harsh discipline policies were defined as 6.5 or higher.

### Structural School Characteristics

School size measured in 100s; class size; public school (yes/no); urban, rural or suburban.

### Extracurricular Activities/Classroom Management

Percent of students who do not participate in extracurricular activities, based on a list of activities including sports, academic clubs, music, newspaper, and yearbook.

Classroom management is the school average of students' responses to four questions. "Since you started school this year, how often have you had trouble:

Getting along with teachers?	Paying attention in school?
Getting your homework done?	Getting along with other students?"

Responses ranged from "never" (0) to "everyday" (4).

### Class Size and School Type

While smaller class size has been shown to improve academic success, class size is not related to the likelihood of students feeling connected to school. Similarly, the type of school—public, private, or parochial—is not associated with school connectedness. Whether a school is urban, rural or suburban also does not predict the level of connectedness in the school.

### Discipline Policies

When schools have harsh or punitive discipline policies, students feel less connected to school. The discipline

policy for any particular infraction does not influence connectedness; rather, harsh discipline climate in general is what seems to be associated with lower school connectedness.

It is unclear which is the cause and which is the effect. Are more restrictive school policies the response to a high prevalence of disconnected students and their behavioral problems, or do punitive discipline policies serve to alienate students from school?

The analysis presented here cannot answer that question.

### Extracurricular Activities

When more students participate in extracurricular activities during or after school, the overall level of school connectedness is higher. But, again, it is unclear whether the association is causal. Do extracurricular activities promote school connectedness or is it simply more likely that kids who are already connected to school will participate in more school activities?



## Teacher Qualifications

Although it is logical to assume that teachers' education level and years of experience would improve the likelihood of students feeling connected to school, Add Health data show that neither is an important factor. Neither the percent of teachers with a Master's degree nor the percent of teachers in their first year of teaching at the school is associated with school connectedness.

## Friendship Groups

Social relations with other students in school are crucial to school connectedness. Specifically, the teens most connected to school are the students who:

- **have the most friends;**
- **have friends from lots of different social groups.**

Conversely, the teens least connected to school are the students who:

- **identify more friends from outside the school than from inside;**
- **are socially isolated—those with few, if any friends in the school.**

Adolescents on the margins of the adolescent social structure face greater health risks, independent of their social background or performance in school. Nationally, four percent of students reported that they had no friends. There were socially isolated students in every school studied.



## Measuring Friendship Groups

Students were asked to identify, by name, their five closest male friends and their five closest female friends. These were tabulated and analyzed by the criteria listed below.

### School Network Density

The ratio of the number of nominations observed to the number of possible nominations in the school.

### School Centralization

Are cliques separated or overlapping? If two people are friends, their friendship distance is one. A friend of a friend is two steps away, and a friend's friend's friend is three. The average distance between all reachable pairs in the school was measured.

*Highly centralized* school social structures are those in which cliques are separate (not overlapping).

*Lesser centralized* school social structures have a loosely tied web of interconnecting relationships.

### School Network Segregation

*Gender* — The extent to which the friendships include boys and girls.

*Race/Ethnicity* — The extent to which the friendship groups in the school include Blacks and Whites.

### Individual Friends Nominated from Outside of School

Students were allowed to nominate friends both inside and outside the school. This variable measures the extent to which the friendship choices of students are oriented outside the school.

### Individual Measure of Popularity and Isolation

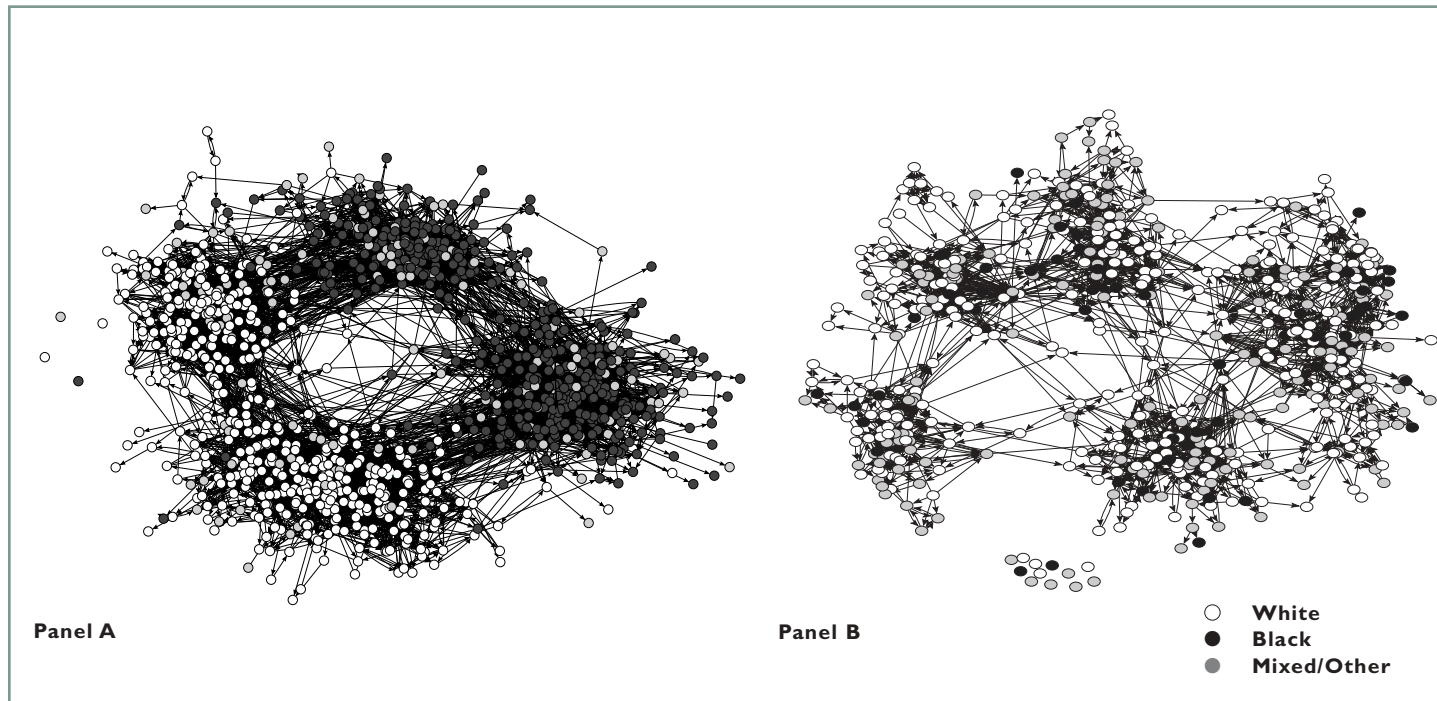
Students who are among the top 10% most often nominated students in the school.

Students who neither nominated any friends, nor received nominations from others in the school.

Regardless of any one student's social position in school, she or he will be affected by the overall pattern of friendship groups in the school. School connectedness is higher for all students when:

- **Social cliques in the school are overlapping and students have social ties to multiple cliques.**
- **There are multiple, reciprocated friendships (e.g., two students each identify the other as friend).**
- **The most popular students in a school are academically motivated and get good grades.**
- **Friendship groups are integrated by race and gender.**





### MAPPING FRIENDSHIP GROUPS

The integration of friendship groups across lines of race, gender and social status enhances students feeling of connectedness to school.

The figures above show how social scientists map social networks. Each circle on the maps above represents a student, and each line depicts a friendship selection made. Clusters of connected circles are friendship groups; circles on the perimeter with no connecting lines reveal socially isolated students.

Panel A is a map of a large school with relatively equal numbers of White students and Black students. There are two large friendship groups made up predominantly of Black students. There are also two predominantly White friendship groups. Other minority students are well represented throughout the school's social network. In this racially integrated school, Black and White students have formed segregated friendship groups.

To a lesser extent friendship groups tend to segregate themselves by socioeconomic status and gender as well. The result is a lower level of connectedness among most students.

Panel B depicts a school that is predominantly White. Students of color are equally represented in each of the five friendship groups. When friendship groups are integrated in this way, school connectedness tends to be higher.

In both schools there are students with no friends. Not surprisingly, these students feel the least connected to school. Many schools have implemented strategies to identify these young people and help link them into the school's social fabric.

# Conclusion

*Feeling connected to school is a significant advantage for adolescents as they transition to adulthood.*



School connectedness protects adolescents against many health risks, including smoking, alcohol, drug use, and early sexual initiation. School connectedness is also good for academic achievement: whatever curriculum is in place will be more effective when students feel connected to school.

The findings presented in this monograph demonstrate that a few school attributes — classroom management, school size, and

integration of friendship groups across lines of race, gender, and social status — help explain why kids in some schools feel more connected to school than kids in other schools. Not only are these factors amenable to change, but there is evidence that schools have successfully changed them.

Improving academic achievement and test scores is the top priority for most schools. Squeezing yet one more thing — school connectedness — onto the plate might feel like too big of a burden. However, many school administrators and teachers are already providing the kind of leadership needed to improve school connectedness. The evidence provided here indicates that these efforts are worth the investment and may have broader value than previously expected.





# Epilogue

*This is the third in a series of monographs*



*funded*

*by the Robert Wood Johnson Foundation.*

This series presents new research findings from the National Longitudinal Study of Adolescent Health that have immediate applicability. The purpose of these monographs is to communicate these new findings to the people who can use this information to improve the health and well-being of adolescents.



## Ten Strategies That Foster Connection to School\*

### For School Administrators

1. Brainstorm with students, faculty, staff and parents simple changes that could make school a more pleasant place to be.
2. Create policies that are based on student, family and neighborhood strengths and assets.
3. Turn mistakes into learning opportunities rather than failures meriting punishment.
4. Acknowledge and honor accomplishments and all types of competencies (such as helpfulness, good citizenship, most improved performance, volunteerism, participation in decision making, and cessation of negative behavior).
5. Set high standards and challenge students to meet them.
6. Reinforce explicit expectations for positive behavior and academic success.
7. Encourage highly interactive teaching strategies.
8. Create a welcoming environment for all who come to the school.
9. Invite family and community members to take active and regular roles in the daily operation of the school.
10. Create a common vision of success and keep it visible.

\* Based on material published in "Protective Schools: Linking Drug Abuse Prevention with Student Success," by Kris Bosworth, PhD. Smith Initiatives for Prevention and Education, College of Education, The University of Arizona, P.O. Box 210069, Tucson, AZ 85721-0069

The findings presented in this monograph contribute to a growing body of research on how to foster positive school climate. The sidebars *Ten Strategies That Foster Connection with School* came from the Smith Initiatives for Prevention and Education at the University of Arizona. These strategies typify the recommendations of many professional organizations of educators.



### Ten Strategies That Foster Connection to School\*

#### For Parents

1. Be a model of respectful, cooperative, positive behavior in your everyday interactions.
2. Participate in school events.
3. Show interest. Be involved in your child's academic activities.
4. Maintain regular contact with your child's teacher.
5. Monitor your child's homework completion and work with him or her on homework assignments that involve family participation.
6. Be present when things go wrong.
7. Meet your child's friend, and their parents.
8. Ask school leaders what you can do to support them.
9. Volunteer at school.
10. Nominate effective school leaders for local awards.

All monographs in this series can be downloaded from the website of the Division of General Pediatrics and Adolescent Health located at <[www.allaboutkids.umn.edu](http://www.allaboutkids.umn.edu)>. The first monograph, *Reducing the Risk: Connections That Make a Difference in the Lives of Youth*, presents the first research findings from Add Health. It shows, among other things, that school connectedness is associated with emotional well-being and lower participation in health risk behaviors.

The second monograph, *Protecting Teens: Beyond Race, Ethnicity and Family Structure*, presents research which shows that race, family income and living in a single-parent family cannot predict whether an individual teen is likely to participate in risky health behaviors.

### Ten Strategies That Foster Connection to School\*

#### For Teachers

1. Help students get to know each other's (and your) strengths.
2. Involve students in planning, problem solving, identifying issues and assessing curriculum in the classroom.
3. Promote cooperation over competition. Post everyone's best work. Offer opportunities for the class to work together to help everyone achieve their level of excellence.
4. Build a strong relationship with each student.
5. Convey attentiveness to students and excitement about learning through nonverbal gestures.
6. Involve all students in chores and responsibilities in the classroom.
7. Integrate concepts of discipline and respect for classmates throughout instruction.
8. Give students more say in what they will learn.
9. Involve student in developing the criteria by which their work will be assessed and provide guidelines so they clearly understand what's expected of them.
10. Use first person plural (we, us, let's) when presenting classroom activities.



\* Based on material published in "Protective Schools: Linking Drug Abuse Prevention with Student Success," by Kris Bosworth, PhD. Smith Initiatives for Prevention and Education, College of Education, The University of Arizona, P.O. Box 210069, Tucson, AZ 85721-0069



This monograph was prepared by Robert William Blum, MD, PhD, Clea McNeely, DrPH and Peggy Mann Rinehart of the Center for Adolescent Health and Development, University of Minnesota. It is based on an analysis of Add Health data and reported in the Journal of School Health, April 2002: McNeely, C.A., Nonnemaker, J.M., Blum, R.W. (2002) Promoting Student Attachment to School: Evidence from the National Longitudinal Study of Adolescent Health. Journal of School Health. Vol 72(4).

All analyses of friendship networks were provided by James Moody, Department of Sociology, Ohio State University, and Peter S. Bearman, Department of Sociology, Columbia University, in their unpublished paper, "Shaping School Climate: School Context, Adolescent Social Networks, and Attachment to School."



Copies (up to 3) of this monograph can be obtained by contacting:

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