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Drug-Free Teens are High on Achievement

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From as early as preschool, children spend a considerable portion of their day in a structured learning environment. This continues with entry into kindergarten and becomes more imposing as time spent away from home increases. By the time a child enters elementary school and transitions eventually to middle school, their day is highly orchestrated involving exposure to different learning practices, varied subject material, and different social and personal demands including structured play (gymnasium) and other mandatory activities (i.e., assembly). Some students accept these practices and given their high levels of motivation to learn, excel in school.

Not all students "fall in line" and excel at academic instruction. They may struggle with academic content, finding history or science dreary and not personally rewarding. Other students find school threatening and unsafe, perhaps having been bullied or pushed around. There are always students who excel in class, but fail to establish relations with their teachers and this weakens their ability to benefit from instruction and learning activities. A different type of student excels academically but

struggles to make friends. These students are often tagged as being "shy" and either left alone or completely rejected by their fellow classmates. Other students revel in being the class jester and act in a loud and boisterous manner, crafting a moniker that can follow them through life. As early as elementary school, teachers diligently note in their records students that they feel are highly motivated and will succeed later in life. They share this insight during parent-teacher conferences, often raising an eyebrow for a parent unaware of their child's strengths or weaknesses in the school setting. High school yearbooks offer another anecdotal glimpse, often taking shape as handwritten notes revealing a classmates' impressions of who would go far in life.

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Concepts of Student Engagement. Student engagement has a long history in educational research. Finn[1] first conceptualized student engagement using a *participation-identification model* primarily emphasizing "behavioral" components centered on class related activities, such as showing up for class, being prepared, paying attention, completing homework assignments, and being responsive to instruction (i.e., following classroom rules). Students who participated would grow fond of and "value" school, identifying with its intended purpose and become invested.[2]

This concept was then expanded to include cognitive (valuing school) and affective (bonding to teachers and the school context) components.[3-4] The cognitive component involves a student's valuation of school including motivational states and self-regulatory processes that encourage mastery of skills leading to psychological investment in learning. The affective component regards whether students feel they belong (i.e., school bonding) as part of their school, are warmly received (accepted and respected), and find comfort in their teachers.[5-6]

What the Literature Says. The student engagement literature documents that students failing to thrive in school and who are poorly engaged also experience poor academic outcomes.[7-8] This sets into motion a sort of "withdrawal" from school and its activities, leading to numerous problems later in life (in general, high school dropouts do not fare as well as graduates in terms of occupational success, income earned, health outcomes, and relationship satisfaction).[9-12] When students begin to devalue school and become disenchanted with the learning process, they struggle to complete assignments, abandon classroom activities, and loosen their ties to an important socializing influence.

We also see another pattern in that disaffected students veer towards other students who share similar views. Forming deviant peer group attachments may strengthen the students' negative outlook towards school and disparage its value (i.e., deviance talk). Engaging with deviant cliques potentially introduces youth to social norms approving of drug and alcohol use (also bullying and violence perpetration). In fact, Bond's study[13] of Australian youth found that students in the bottom 20% of school and social connectedness were 1.5 times more likely to drink alcohol two years later. Absent engagement to school and lacking exposure to conventional norms, students appeared more willing to break rules and engage in deviant activities.

Current Study Methodology. We recently extended the concept of student engagement to reflect a combination of academic motivation, feelings of connectedness, caring relations, and meaningful participation. In this **eNEWs** we share some of the preliminary findings that resulted from a test of whether student engagement is related to substance use using data obtained from a relatively large statewide health survey.

The *California Healthy Kids Survey* (CHKS) is a mandatory biennial survey administered to middle and secondary school students by the California Department of Education. The survey helps school administrators and educators place a finger on the pulse of student activities as well as obtain richer insight into student attitudes toward a variety of academic and health-related factors (i.e., safety at school). The data also supports the now California legislature approved school accountability movement giving an unblemished view of programs intended to improve school climate.[14] In the study reported here, we examined data from grades 7, 9 and 11. All of the survey questions are self-report including students' substance use and engagement.

Modeling Student Engagement. We examined the association of student engagement with substance use. A total of 18 items were used to model the traditional facets of academic motivation (e.g., I try hard to make sure that I am good at my schoolwork) and caring relations (e.g., there is a teacher or some other adult … who really cares about me) and also meaningful participation (e.g., I help decide things like class activities or rules), and connectedness (e.g., I feel like I am part of this school). We also examined the model separately for male and female students, and by age group, contrasting middle and high school students.

Substance Use. We modeled a latent "Substance Use" factor reflected by four indicators assessing different aspects of *alcohol*, *cigarette and tobacco product* use (e.g., dip, chew, or snuff, e-cigarettes), *marijuana*, and *other drug use* (inhalants, cocaine, pills, heroin, Ecstasy, psychedelics, prescription pain medicine, diet pills, cough or cold medicine). The substance use items assessed frequency, intensity (i.e., binge drinking), recent past 30-day use, and use of the different substances on school property.

Study Findings. A four-factor confirmatory factor analysis model fit well, showing each dimension of student engagement was highly reliable. Furthermore, the basic factor analysis structure was consistent across gender and age groups. All four dimensions of student engagement related uniquely to substance use. Academic motivation had the largest effect on substance use. The next largest was connectedness, and caring relations was associated with substance use only for younger students.

Covariate adjusted models indicated that the four facets of engagement were no longer associated significantly with substance use for the 7th graders, controlling for gender, race, ethnicity, reduced lunch status, grades, after-school program attendance, skipping school, and feeling depressed for the past year. However, connectedness and academic motivation were significantly associated with substance use for the 9th graders. With the addition of control measures, all four student engagement factors were related to substance use for the 11th graders. Grades had the largest magnitude of effect on substance use, controlling for engagement and the other control measures. For 11th graders, other significant factors related to substance use included negative emotions and skipping school.

Study Limitations. The cross-sectional nature of these data limits our ability to infer causation. Notwithstanding, the CHKS uses a demographically representative sample, and provides an excellent picture of student life in the US that reflects current trends in education. The snapshot we took of student engagement began in the 7th grade and conceivably, the process of disaffection toward school begins even earlier when students attend elementary school.

Looking Towards the Future. Carefully crafted behavioral interventions provide a means to improve academic skills and boost student motivation. This can build trust in the learning process, help students find caring teachers, and improve their cognitive skill set. Other interventional modalities can concentrate on improving the school climate, cultivating an environment where students feel safe and believe that school represents a fair and democratic environment. This should surely foster a sense of pride in their school.

The study findings also suggest the need for programs that target multiple dimensions of student engagement, involving student-teacher bonds that generate positive feelings toward the goals and meaning of education.[15] Taken as a whole, this effort will provide a blueprint for students' ongoing engagement and should pave the way toward success in their future endeavors.

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