

Assessing the Effect of External Resources on School-Based Substance Abuse Prevention Programs

Alcohol and drug use and abuse by children and adolescents are serious and growing problems. Recent efforts at prevention have been only modestly successful. There is no question as to whether substance abuse prevention programs for children and youths are needed. The consequences of substance abuse are grave to both individual and society. Studies show that adults with a variety of problematic behaviors tended to use and abuse substances as children and youths (DeLuca, 1981; Dielman, Shope, Leech, & Butchart, 1989; Dryfoos, 1990). Children and youths suffer serious health and developmental dangers from substance use and abuse (Hawkins, Catalano, & Miller, 1992; Newcomb & Bentley, 1988; U.S. Department of Health and Human Services, 1983). As many as four of five children who attempt suicide are under the influence of a substance, and more than 90 percent of deaths in adolescents can be linked to substance-related incidents (American Academy of Pediatricians, 1987). The social costs are many: high demands for health care and mental health, educational failures, the need for sub-

This article assesses the effect of allocating external resources to school-based substance abuse prevention programs. It is based on a study conducted in a large and ethnically diverse midwestern urban school district. The 55 participating schools implemented a variety of classroom-based prevention programs and complementary school-based prevention activities. A selected group received additional support from an external innovator. The schools receiving external resources were treated as the experimental group, and the remaining schools were treated as the comparison group. The assumption was that students attending schools receiving additional resources would have demonstrated more positive outcomes than students attending the comparison schools. All students completed a self-reported survey. Mixed overall results were found between experimental and comparison groups. The findings are interpreted from an ecological systems approach and in relationship to developmental and environmental factors. Theoretical and programmatic implications are discussed, and recommendations for school social workers and other helping professionals working at schools are examined.

Key words: drugs; ecological systems approach; external resources; prevention; program effectiveness

stance abuse treatments, higher unemployment, higher risk of HIV/AIDS, and increased crime (Hawkins et al., 1992).

The National Survey Results on Drug Use from the Monitoring the Future Study (Johnston, O'Malley, & Bachman, 1994) showed an increase in drug use, particularly for the "gateway drugs," including marijuana, cigarettes, and inhalants, that often predict the later use of other substances such as crack and cocaine (Johnston et al., 1994). The age of initiation into alcohol and other drugs use has consistently gotten younger and, consequently, prevention programs need to intervene early (Abbey, Oliansky, Stilianos, Hohlstein, & Kaczynski, 1990). Several studies have found that most children recognize beer and liquor by age three and have developed positive expectations about alcohol's effects by age six (Miller, Smith, & Goldman, 1986; Spiegler, 1983). Bloom and Greenwald (1984) found the average age of first full alcoholic drink consumption to be 8.6 years. Studies also have found that between fifth and seventh grades, students have begun substantial experimentation with alcohol (Abbey et al., 1990). Age of initiation varies for different substances. Clearly, alcohol and tobacco have the earliest age of initiation, with inhalants and marijuana following (Johnston, O'Malley, & Bachman, 1995). Peak initiation ages for these substances are as follows: alcohol, sixth through ninth grades; tobacco, fifth through seventh grades; inhalants, sixth through ninth grades; and marijuana, eighth through 11th grades (Johnston et al., 1995). Other illicit drugs do not reach peak initiation rates until the high school years.

Researchers concluded, "the drug problem is not an enemy which can be vanquished, as in a war. It is more a recurring and relapsing problem which must be contained to the extent possible on a long term, ongo-

ing basis" (Johnston et al., 1994, p. 25). A recent national survey on this topic found that illegal drugs are commonly sold on school campuses. Forty-one percent of high school students reported that they have seen drugs being sold at school (Wren, 1997).

In recent years, school-based programs have become the primary means for providing substance abuse prevention services to children and youths around the nation. The trend has been to use universal programs, implemented from outside the system, such as the DARE (drug abuse resistance education) program, which currently exists in every state in the United States and in other countries as well (Project DARE, cited in Harmon, 1993). Such widespread dissemination might seem to suggest overwhelming success of the program; however, evaluation findings have been mixed, with some showing positive results and others, neutral or even negative implications (Harmon, 1993). Unfortunately, external programs like DARE that use an information provision model are not enough to have a lasting behavioral effect on children. Such projects have failed to reduce drug use, and some researchers also have found that there was a subsequent increase in students' use of certain substances (Clayton, Cattarello, & Walden, 1991; Harmon, 1993). This article supports the premise that solid and lasting interpersonal relationships with children are the key to enduring changes. Effective prevention efforts must arise out of and be "owned" by the unique school staff in partnership with external agencies and be tailored to children's level of development, allowing for true relationships to be built and culturally competent interventions to be facilitated.

Review of the Substance Abuse Prevention Literature

Most prevention literature maintains that to determine the important elements of substance abuse prevention programs researchers must first have an understanding of why children use drugs. This pathology and deficit-based model pervades the literature, although it ignores the relatively normative initiation to drugs and alcohol demonstrated by the statistics of national surveys (Qohnston et al., 1994). Hawkins et al. (1992), for example, provided an extensive survey of designated risk factors, stating that peers, family, and community have a profound effect, as do personality variables including non-conformity, impulsivity, rebelliousness, and high tolerance for deviance. Other researchers embracing this paradigm add poor self-concept, anxiety, lack of social confidence, and deficient problem-solving abilities to the list of supposed "causes" for drug and alcohol abuse susceptibility. Thus, such conclusions support designing prevention interventions targeting these risk factors (Caplan et al., 1992; Dielman, Kloska, Leech, Schulenberg, & Shope, 1992). However, the emphasis on risk factors alone may make the mistake of assuming that any program designed to address such factors will be effective, regardless of the attitude toward the intervention and the implementer's relationship with the students.

When examining the issue of prevention program implementers, it is important to study specific "protective" or "resilience" factors that have potential to mediate or moderate the effects of risk (Coie et al., 1993; Cowen & Work, 1988). Such factors include a strong bond with a significant adult; realistic expectations of self, others, and the environment; an

external support network, a repertoire of social problem-solving skills; and a belief in one's own efficacy (Hawkins et al., 1992; Zunz, Turner, & Norman, 1993). Often, schools do not have sufficient resources to provide students with such an array of protective variables. In other cases, teachers feel overwhelmed by the demands and feel unprepared to respond to the growing needs students present.

The issue of norm development also is considered in the youth substance abuse prevention literature. School-based efforts allow for early intervention that is crucial because correlational research has shown that the earlier the initial use, the greater the probability of more serious and ongoing use later (Dryfoos, 1990; Falck & Craig, 1988). Delaying age of onset of drug use can reduce the intensity of future use and increase the likelihood that use will cease (Robins, 1984). By targeting early experimentation with gateway drugs (that is, alcohol, cigarettes, and marijuana), programs can inhibit other substance use (Kandel & Logan, 1984; Pentz et al., 1989).

Historically, the earliest form of drug prevention was the informal provision of information on drugs and their effects. Research generated during the 1980s and 1990s has strongly questioned the effectiveness of the information-only type of prevention programs (Botvin, Baker, Dusenbury, Tortu, & Botvin, 1990; Bukoski, 1986; Tobler, 1986, 1989). This form of intervention failed to produce reduction in drug use, in addition, some researchers even found that there was a subsequent increase in use of alcohol and cigarettes afterward (Falck & Craig, 1988). With the contributions of social theorists including Bandura (1977), Jessor and Jessor (1975), and

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McGuire and Padawersinger (1976), models began to consider the interplay of individual, social, and environmental factors (Falck & Craig, 1988). These models incorporated the complex, multilevel interaction of children with their environment and social and family systems.

The ecological systems model among others stresses the concept of multiple levels of influence on child development (Lorion, 1987; Tolan, Guerra, & Kendall, 1995) and the complex interaction of child and environment. This perspective emphasizes the need to view the individual and environment as a unitary system and to insert interventions within a particular cultural context (Germain, 1973). The ecological model rejects linear assumptions of predictability based on simplistic cause and effect associations. Instead, causality is put aside in lieu of a focus on consequences of person-environment exchanges, each affecting the other and influencing outcomes.

Applying the Ecological Systems Model

The prevention field is growing in awareness of the importance of involving community resources in the planning and implementation of school interventions. It has been argued that a successful program implementation can be likened to an "organizational reorganization" (Price & Lorion, 1989) involving effective resource utilization, thorough environmental scanning, and negotiation of goals and objectives. Prevention programs cannot flourish without participation, commitment, and a sense of ownership on the part of the host environments (Kelly, 1987; Price & Lorion, 1989). In addition, the integrity of the teachers implementing the programs directly affects the success

of the intervention (Hansen, Graham, Wolkenstein, & Rohrbach, 1991).

In effective school-based programs, school staff and community assume "ownership" of the prevention projects (Mrazek & Haggerty, 1994). Numerous research studies suggest that increasing the sense of ownership by the host organization is crucial to the success of programs (see Tornatzky, Fergus, Avellar, & Fairweather, 1983). Price and Lorion's (1989) important contribution to the field of prevention was the identification of two critical ingredients for a program's efficacy: (1) the skills of the program innovator and (2) the readiness of the host organization. The authors emphasized that successful prevention program designs do not necessarily lead to effective implementation. They made the crucial point that the intervention involves complex transactions among individuals, and the context adds further complexity by virtue of a variety of dynamic organizational and cultural forces that can act either to protect and strengthen the innovation or to undermine and distort it (Price & Lorion, 1989). Outside implementers must gain acceptance before implementing a program. However, the school setting is a more natural solution—implementing the program from within requires incorporating school staff as both innovators and hosts. Price and Lorion supported the premise that a program's positive outcome requires that the host be a "major stakeholder" in the success of the intervention. They noted that a successful innovator involves the individual or organization at some level in the different phases of the preventive enterprise.

The culture of each school varies depending on the principal, staff, location, and students. One cannot

expect a single program design to fit all cultures or schools. Research suggests that culturally specific programs are imperative (Gordon, 1994). In particular, programs designed to serve the needs of urban youths from ethnic minority groups have more effect when they reflect sensitivity to the unique cultural characteristics of the students (Botvin, Schinke, Epstein, Diaz, & Botvin, 1995; Lee & Richardson, 1991). For example, the literature addressing substance abuse prevention with African Americans frequently cites Asante (1988), whose book outlined the importance of what he terms "Afrocentricity," a concept emphasizing the need for strong interpersonal connections and identity as well as elimination of oppression and spiritual alienation (Schiele, 1996).

The age of the students is another factor to be considered. The specific developmental needs of the different age groups should be integrated in the design and delivery of interventions and programs.

Integrating External Resources into the Schools

Culturally grounded prevention programs need the commitment of teachers and administrators, but at the same time they often need the effective incorporation of additional external resources to implement needed services and to gain needed skills. Schools are very open and porous institutions, especially in terms of prevention services, because they often host different external innovators and providers. External resources can be an asset by bringing needed resources (that is, expertise, information, technology transfer, and people power) to the schools. However, an inherent risk attached to the use of external resources is the potential dis-

engagement of teachers from prevention programs. Some teachers may stop participating under the assumption that somebody else is doing it. Teachers may not perceive external innovators as partners in their own prevention efforts. On the other hand, external innovators may not feel welcome and may not be able to contribute effectively to the prevention program. Little is known about the effect of external resources on the students' outcomes of prevention programs.

In this particular study we focused on evaluating behavior and attitudinal change among the children participating in school-based substance abuse prevention programs in schools that used skilled external innovators and in schools that did not use skilled external innovators. Although the external innovators did not work directly with the students, their work with the teachers and school administrators was aimed at affecting the children. A teacher that felt supported and better trained was assumed to be able to work more effectively.

Program Design

This study took place in a large midwestern urban school district with a well-established drug-free schools program. Based on an ecological perspective, the district's administrators encouraged as much tailoring of the standardized program to each school culture as possible in the design and delivery of prevention services. Although the district encouraged innovation, teachers often felt torn between the mandate for innovation and the desire for a standardized, predictable, scripted curriculum. Teachers' desire for the latter may result from time and energy constraints, lack of knowledge on curriculum adaptation, lack of confidence in their own prevention skills and expertise, and

dilemmas regarding evaluation of the effectiveness of the innovation.

To support teachers in prevention program innovation, a large public health organization was contracted to support the school-based programs at selected schools. Skilled professional innovators were assigned to selected schools. They came from allied fields such as public health, nursing, and social work. Between two and three innovators were assigned per school one day per week. Their main role entailed facilitating faculty inquiry teams (Marsiglia & Zorita, 1996). In these group sessions teachers were encouraged to address a variety of topics, including school culture, their own biases toward the students and their families; analysis of available alcohol, tobacco, and other drugs (ATOD) school-based data; and their perceptions of the efficacy of the prevention programs. Consequently, inquiry teams worked on adjusting classroom-based curricula to make the courses culturally grounded. They also designed and implemented school-specific alternative interventions addressing students' knowledge, attitudes, and behavioral changes. The external professional team members aimed their efforts at strengthening the capacity of the school-based programs without supplanting their efforts. If applied correctly, all of the elements consistent with the ecological systems approach can translate into favorable student prevention outcomes.

Method

This research was born out of the need to assess whether these additional resources had any effect on the students attending the selected schools. The research followed a static-group comparison pre-experimental design (Campbell & Stanley, 1963). The ex-

perimental group consisted of the 17 randomly assigned schools receiving external support. The comparison group consisted of 38 randomly selected schools not receiving additional resources. All 55 schools were implementing similar nontraditional classroom-based curricula.

The overall research question was whether "more is better": Are schools more successful at prevention when they receive additional or external resources? This question was evaluated by comparing students' self-reported data on behaviors and attitudes toward ATOD in the experimental and comparison groups during the second year of the implementation of the experimental component. This article uses these students' reports as outcome data. The fact that all schools followed an ecological systems approach in their prevention programs provided consistency in terms of project implementation across all schools. The major known factor making these two groups of schools different from each other was the presence or absence of the systematic incorporation of a team of external innovators.

Measures such as school context or culture, teachers' perceptions, and the relationships between external and internal resources were not captured by the research design. These and other process and environmental variables will be incorporated in the next phase of this research to explore possible differences among schools. Ethnographic data will assist the researchers in their understanding of how innovations took place.

Data Collection and Analysis

A self-administered survey was completed by 1,279 students enrolled in grades 4 through 11. One classroom per building, with 23 students

on average, was randomly selected in each participating school. The respondents were enrolled in the 55 randomly selected buildings out of 126 district schools. City zones determined the building random selection to control for geographic representation. To make the sample representative of the diverse student body present at each school, only English and English as a second language classes in intermediate and high schools were part of the initial pool of classrooms. In the elementary schools all classrooms were part of the initial list. Surveys were filled out anonymously. Because prevention research is conducted primarily in natural social settings, methodological shortcomings are virtually unavoidable (Coie et al., 1993; Hansen, 1992). The sample did not include students who were absent on the day of the survey administration.

The survey instrument consisted of a two-page 11-item questionnaire with demographic, Likert, and checklist formats. The survey was designed by one of the authors to measure the students' behaviors and their attitudes with regard to ATOD. Four separate items assessed students' behavior with regard to the use of tobacco, inhalants, alcohol, and marijuana. These

items were on a six-point Likert-type scale ranging from "never" = 1 to "daily" = 6. They were moderately correlated with each other with the exception of use of inhalants, which was not highly correlated with the other drugs (see Table 1). However, all four items had adequate internal consistency (Cronbach's alpha = .68).

Attitudes were measured with a number of dichotomous items. Some items assessed whether an individual felt that drugs were "okay" or "not okay." Some items examined perceptions of the reasons young people begin using drugs (for example, "to feel better," "to forget something bad"). Reasons to avoid drug use were also reported (for example, "they cost too much," "they are against the law"). Finally, some items measured the student-identified sources of information about drug prevention (for example, from teachers or counselors and from parents).

A series of comparisons were made between the experimental and comparison groups on students' attitudes and behaviors regarding ATOD. Simple frequencies, percentages, t tests, multivariate analyses of variance (MANOVAs), and logistic regressions were used to explore differences between the two groups of

Table 1
Correlation Matrix of Drug Use Behavior Measures

Substance	Measure		
	1	2	3
Tobacco			
Inhalants	.1178*		
Alcohol	.4686*	.1295*	
Marijuana	.4719*	.0855*	.5999*

*p < .01.

respondents and between school grade levels.

Findings

Respondents as a whole followed the district's ethnic and gender distribution, and the experimental and comparison groups presented virtually identical demographic profiles. Some differences between experimental and comparison groups were found by ethnicity and school level.

The experimental group was more likely to have African American stu-

dents (78 percent) than the comparison group (72 percent) and less likely to have white students (11 percent) than the comparison group (19 percent) (Table 2). Also, the distribution of treatment group differed by school level, with a higher percentage of middle school students (29 percent) in the experimental than in the comparison group (19 percent). The differences for ethnicity and for school level were statistically significant ($p < .001$). The experimental and comparison groups did not differ by

Table 2

Demographic Profile of Respondents to Drug Use Attitude Survey

Variable	Experimental		Comparison		Total	
	<i>n</i>	%	<i>n</i>		N	
Schools	17	31	38	69	55	100
Respondents	365	28	910	72	1,275	100
Gender						
Male	164	45	398	43	562	44
Female	201	55	515	57	716	56
Ethnicity						
American Indian	7	2	10	1	17	1
White	46	11	172	19	218	17
African American	284	78	665	72	949	74
Asian American	3	1	27	3	30	3
Hispanic	25	7	36	4	61	5
School level						
Elementary	171	47	425	47	596	47
Middle school	108	29	175	19	283	22
High school	86	24	310	34	396	31
Age						
8-10	44	12	151	17	195	15
10-13	164	45	323	36	487	38
19-16	138	38	341	37	479	38
17-20	19	5	95	10	117	9
Grade						
A and B	240	65	582	64	822	64
C and D	116	32	303	34	419	33
Mostly F	9	2	25	2	29	3
Days absent						
0-6	255	70	635	70	893	70
7-14	79	22	189	21	267	21
15-21	15	4	59	6	74	6
22+	16	4	27	3	44	3

gender, age, letter grade, or number of days absent.

Behavior

A preliminary analysis, using t tests, of self-reported data on behaviors toward ATOD compared aggregate means for the experimental and comparison groups, by school level (Table 3). From these comparisons it can be observed that the size and direction of differences between the experimental and comparison groups varied by grade level. No differences were found at the elementary school level, and the differences found at the middle school level showed the experimental group reporting a higher substance use rate than students in the comparison group.

At the high school level, the experimental group was significantly less likely than the control group to use alcohol or tobacco. This initial analysis appears to indicate that school level plays an important role in how external resources affect students' program outcomes. This finding also was confirmed by MANOVA conducted on the three substance-use items using experimental or control group and school level as predictors. There was a significant multivariate interaction between experimental group and school level in predicting

the frequency of substance use ($p < .01$). In reducing use of alcohol, tobacco, and marijuana, additional external resources used at the experimental schools had no measurable effect at the elementary level; they had the intended effect at the high school level and the reverse effect at the intermediate school level.

Attitudes

Student attitudes toward the use of alcohol, tobacco, and marijuana were analyzed by using a logistic regression procedure that predicted whether students approved of substance use (okay to use versus not okay to use). The predictors included whether the student was in the experimental group receiving external resources, school level (elementary, middle, or high school), and interactions between experimental group and school level.

There was no overall significant experimental group effect for any of the three substances (Table 4). There was, however, a significant main effect of school level alone for all three substances. Elementary school students were less likely than middle school students to approve of substance use. There was also a significant interaction between experimental group and school level, showing

Table 3

Mean Frequency of ATOD Use for Significant Dependent Variables by School Level and Experimental and Comparison Groups

School Level	Alcohol			Tobacco			Marijuana		
	E	C	D	E	C	D	E	C	D
Elementary	1.3	1.3	—	1.2	1.2	—	1.1	1.1	—
Middle	2.1	1.7	.4**	1.9	1.5	.4**	1.9	1.6	.3**
High	1.7	2.0	-.3**	1.2	1.6	-.4**	1.6	1.9	-.3

NOTE: E = experimental; C = comparison; D = difference. Frequency: 1 = never to 6 = daily. **p < .01.

Table 4

Logistic Regression Predicting Approval versus Nonapproval of ATOD Use

Category	' Alcohol		Tobacco		Marijuana	
	<i>b</i>	Odds Ratio	<i>b</i>	Odds Ratio	<i>b</i>	Odds Ratio
Experimental	.267	1.306	.271	1.311	.586	1.798
Elementary'	-1.392***	.248	-1.060***	.346	-2.406***	.090
High school'	.519	1.680	-.424	.654	.592	1.808
Experimental x Elementary	.018	1.018	.123	1.131	.316	1.371
Experimental x High school	-1.069*	.343	-.158	.853	-1.054*	.348
Constant	-.656		-1.206		-1.348	
N	1,279		1,279		1,279	
-2 log lik x2 (<i>df</i>)	1342.6(1)		1067.3 (1)		975.1(1)	

NOTE: ATOD = alcohol, tobacco, and other drugs.

'School level is coded using dummy variables to compare elementary and high school students to those in middle schools (the omitted reference category). The regression weights represent the difference between the given school level and middle schools.

* $p < .05$. *** $p < .001$.

that high school students in the experimental group were only one-third as likely to approve of marijuana and alcohol use than were middle school students. There were no significant differences between experimental and control groups in the other grade levels.

Reasons to Avoid ATOD

A logistic regression showed that students in the experimental group did cite different reasons ATOD use should be avoided (Table 5). Although there was not an overall experimental effect on whether students cited different reasons to avoid ATOD, elementary students in the experimental group were more likely than those in the comparison group to report that ATOD should be avoided because "they are against the law," "because their parents say so," and "because their teachers and counselors say so." In other words, the incorporation of external resources appears to have increased the level of effectiveness of the prevention mes-

sages at the elementary school level but not at other levels.

There were main effects of school level showing that high school students were less likely than middle school students to say that ATOD should be avoided because "they are dangerous or harmful" and they were more likely to say "because teachers and counselors say so" (Table 5). One can conclude that middle school students responded better to health-risk-type messages than to moral or authority-based messages.

In summary, the student self-reported outcome data appear to indicate that additional external resources supporting teachers doing prevention work had a measurable effect on elementary and high school students. Furthermore, at the elementary level the effect was captured by attitudinal type of measurements, whereas at the high school level, differences were observed between the experimental and comparison groups in both behavioral and attitudinal measurements.

Table S

Logistic Regression Predicting ~~Reasons not~~ to Use ATOD

Category	Cost Too Much		Dangerous or Harmful		Against the Law		Parents Say No		Teachers and Counselors Say No	
	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio	b	Odds Ratio
Experimental	.453	1.574	.223	1.250	-.305	.737	-.303	.738	.051	1.052
Elementary	.075	1.078	-.186	.829	-.425	.653	-.696	.498	-1.029	.357
High school	-.196	.821	-.396*	.672	-.016	.983	-.323	.723	.512**	1.669
Experimental x elementary	-.112	.893	.124	1.132	1.097*	2.996	1.016*	2.764	.849**	2.337
Experimental x high school	-.229	.795	.005	1.005	.208	1.231	-.247	.780	-.327	.720
Constant	.266		.415		-.415		-1.802		-.813	
	1,279		1,279		1,279		1,279		1,279	

NOTE: ATOD = alcohol, tobacco, and other drugs.

*p<.05.**p<.01.

Discussion

As was mentioned in the Method section, these findings are based on the students' responses. Future research efforts need to examine the actual process of incorporating external resources from an ecological systems approach. A mixed quantitative-qualitative research design would provide the types of data necessary to further this research in the desired direction. However, the current data enhance our understanding of the incorporation of external resources and raise stimulating questions.

The significant experimental effect documented for reasons not to use ATOD among elementary school students may indicate that additional external resources effectively reinforce teachers' efficacy in teaching behavioral norms and refusal strategies to younger students that may prevent them from experimenting with substances.

Contrary to commonly held perceptions, the findings of this research suggest that the attitudes and behaviors of high school students can be positively affected by the integration of external resources into school-based prevention projects. External innovators were trained to exercise a leadership role by providing support for teachers who were willing to participate and by motivating others to participate. Engaging and supporting high school teachers in adapting curricula to the needs and cultures of their students may produce the sense of ownership (Mrazek & Haggerty, 1994; Price & Lorion, 1989; Tornatzky et al., 1983) that is needed from an ecological perspective for prevention efforts to work.

Middle school students self-reported the highest use rate of any age group. Their overall less favorable outcomes may be a reflection of the

strong tendency toward experimentation of this age group. With time, some of the students experimenting will stop using, some may become heavy users and drop out of school, and most of them will fall somewhere within this continuum. Zero tolerance policies made it difficult for teachers and external innovators to address the issues related to experimentation at the middle school level effectively. If the prevention messages are crafted as if the students are not using, when in fact many of them are, the interventions' effectiveness in changing behavior will be limited. Perhaps, drug use needs to be recognized as part of the students' culture. By denying its existence, prevention programs have little chance to affect change.

These findings appear to reinforce the idea that the role of external innovators needs to be carefully tailored by age group (Tolan et al., 1995). There is an apparent confluence of stages of development of children and youths that makes them more prone to accept and use ATOD. Most teachers were willing to participate and be active in the prevention efforts. However, they needed support with the very sophisticated task of operationalizing culturally specific programs (Botvin et al., 1995; Lee & Richardson, 1991).

The dilemma this research raises is that external innovators appeared to have had the least success in the middle schools, the age group most in need of effective prevention programs. There is no question that external resources are needed to supplement internal resources and support teachers in their efforts to reach this hard-to-reach age group effectively. However, the participation of those external resources needs to be tailored to the unique needs of this age group and to

- American Academy of Pediatrics, Committee on Adolescence. (1987, March). Alcohol use and abuse: A pediatric concern [Special issue]. *Pediatrics*, 79(3).
- Asante, M. K. (1988). *Afrocentricity*. Trenton, NJ: Africa World Press.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bloom, M. D., & Greenwald, M. A.-(1984). Alcohol and cigarette use among early adolescents. *Journal of Drug Education*, 14, 195-205.
- Botvin, G. J., Baker, E., Dusenbury, L., Tortu, S., & Botvin, E. M. (1990). Preventing adolescent drug abuse through a multimodal cognitive-behavioral approach: Results of a 3 year study. *Journal of Consulting and Clinical Psychology*, 58, 437-446.
- Botvin, G. J., Schinke, S. P., Epstein, J. A., Diaz, T., & Botvin, E. M. (1995). Effectiveness of culturally focused and generic skills training approaches to alcohol and drug prevention among minority adolescents: Two-year follow-up results. *Psychology of Addictive Behaviors*, 9, 183-194.
- Bukoski, W. J. (1986). Drug-abuse prevention funding resulting from the Omnibus Budget Reconciliation Act of 1981. *Journal of Drug Addiction*, 16, 51-55.
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Skokie, IL: Rand McNally.
- Caplan, M., Weissberg, R. P., Grober, J. S., Sivo, P. J., Grady, K., & Jacoby, C. (1992). Social competence promotion with inner-city and suburban young adolescents: Effects on social adjustment and alcohol use. *Journal of Consulting and Clinical Psychology*, 60, 56-63.
- Clayton, R. R., Cattarello, A., & Walden, K. P. (1991). Sensation seeking as potential mediating variable for school-based prevention intervention: A two-year follow-up of DARE. *Journal of Health Communications*, 3, 229-239.
- Coie, J. D., Watt, N., West, S. G., Hawkins, D., Asarnow, J. R., Markman, H. J., Ramey, S. L., Shure, M. B., & Long, B. (1993). The science of prevention: A conceptual framework and some directions for a national research program. *American Psychologist*, 48, 1013-1022.
- Cowen, E. L., & Work, W. (1988). Resilient children, psychological wellness and primary preventions. *American Journal of Community Psychology*, 16, 591-607.
- DeLuca, J. (1981). U.S. *Department of Health and Human Services Fourth Special Report to the U.S. Congress on alcoholism and health*. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism.
- Dielman, T. E., Kloska, D. D., Leech, S. L., Schulenberg, J. E., & Shope, J. T. (1992). Susceptibility to peer pressure. *Journal of School Health*, 62,233-237.
- Dielman, T. E., Shope, J. T., Leech, S. L., & Butchart, A. T. (1989). Differential effectiveness of an elementary school-based alcohol misuse prevention program. *Journal of School Health*, 59, 255-263.
- Dryfoos, J. G. (1990). *Adolescents at risk*. New York: Oxford University Press.

- Falck, R., & Craig, R. (1988). Classroom-oriented, primary prevention programming for drug abuse. *Journal of Psychoactive Drugs*, 20, 403-408.
- Germain, C. B. (1973). An ecological perspective in case work practice. *Social Casework*, 54, 323-330.
- Gordon, J. U. (1994). *Managing multiculturalism in substance abuse services*. Thousand Oaks, CA: Sage Publications.
- Hansen, W. B. (1992). School-based substance abuse prevention: A review of the state of the art in curriculum, 1980-1990. *Health Education Research: Theory and Practice*, 7, 403-430.
- Hansen, W. B., Graham, W., Wolkenstein, B. H., & Rohrbach, L. A. (1991). Program integrity as a moderator of prevention program effectiveness: Results for 5th grade students in the adolescent prevention trial. *Journal of Studies on Alcohol*, 52, 568-579.
- Harmon, M. A. (1993). Reducing the risk of drug involvement among early adolescents: An evaluation of drug abuse resistance education (DARE). *Evaluation Review*, 17, 221-239.
- Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, 112, 64-105.
- Jessor, R., & Jessor, S. L. (1975). Adolescent development and the onset of drinking. *Journal of Studies on Alcohol* 36, 27-51.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1994). *National survey results on drug use from the Monitoring the Future Study, 1975-1993*. Rockville, MD: U.S. Department of Health and Human Services, National Institute on Drug Abuse.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1995). *National survey results on drug use from the Monitoring the Future Study, 1975-1994*. Rockville, MD: U.S. Department of Health and Human Services, National Institute on Drug Abuse.
- Kandel, D. B., & Logan, S. H. (1984). Problems of drug use from adolescence to young adulthood. *American Journal of Public Health*, 74,660-666.
- Kelly, J. G. (1987). Seven criteria when conducting community-based prevention research: A research agenda and commentary. In J. A. Steinberg & M. M. Silverman (Eds.), *Preventing mental disorders: A research perspective* (DHHS Pub. No. ADM 87-1492, pp. 57-71). Washington, DC: U.S. Government Printing Office.
- Lee, C. C., & Richardson, B. L. (Eds.). (1991). *Multicultural issues in counseling. New approaches to diversity*. Alexandria, VA: American Association for Counseling and Development.
- Lorion, R. (1987). Methodological challenges in prevention research. In J. A. Steinberg & M. M. Silverman (Eds.), *Preventing mental disorders: A research perspective* (DHHS Pub. No. ADM 87-1492, pp. 28-47). Washington, DC: U.S. Government Printing Office.
- Marsiglia, F., & Zorita, P. (1996). Narratives as a means to support Latino/a students in higher education. *Reflections*, 2(1), 54-62.

- McGuire, W. J., & Padawersinger, A. (1976). **Trait salience in spontaneous self-concept.** *Journal of Personality and Social Psychology*, 33, 743-754.
- Miller, P. M., Smith, G. T., & Goldman, M. S. (1986). *Identification of alcohol expectancies in children aged 5-12.* Paper presented at the Annual Meeting of the American Psychological Association, Washington, DC.
- Mrazek, P. J., & Haggerty, R. J. (1994). *Reducing risks for mental disorders. Frontiers for preventive intervention research.* Washington, DC: National Academy Press.
- Newcomb, M. D., & Bentley, P. M. (1988). *Consequences of adolescent drug use: Impact on the lives of young adults.* Newbury Park, CA: Sage Publications.
- Pentz, M. A., Dwyer, J. H., MacKinnon, D. P., Flay, B. R., Hansen, W. B., Wang, E., & Johnson, C. A. (1989). **A multicomunity trial for primary prevention of adolescent drug abuse: Effects on drug use prevalence.** *JANIA*, 261, 3259-3266.
- Price, R. H., & Lorion, R. (1989). **Prevention programming as organizational re-invention: From research to implementation.** In D. Shaffer, I. Philips, & N. B. Enzer (Eds.), *Prevention of mental disorders, alcohol and other drug use in children and adolescents (OSAP Prevention Monograph-2, DHHS Pub. No. ADM 90-1646, pp. 97-123).* Washington, DC: U.S. Government Printing Office.
- Robins, L. N. (1984). **The natural history of adolescent drug use.** *American Journal of Public Health*, 74, 656-657.
- Schiele, J. H. (1996). **Afrocentricity: An emerging paradigm in social work practice.** *Social Work*, 41, 284-294.
- Spiegler, D. L. (1983). **Children's attitudes toward alcohol.** *Journal of Studies on Alcohol*, 44, 542-552.
- Tobler, N. S. (1986). **Meta-analysis of 143 adolescent drug prevention programs: Quantitative outcome results of program participants compared to a control comparison group.** *Journal of Drug Issues*, 4, 537-567.
- Tobler, N. S. (1989, October 23-25). **Drug prevention programs can work: Research findings.** Paper presented at the conference "What Works: An International Perspective on Drug Abuse Treatment and Prevention Research," New York.
- Tolan, P. H., Guerra, N. G., & Kendall, P. C. (1995). **A developmental-ecological perspective on antisocial behavior in children and adolescents: Toward a unified risk and intervention framework.** *Journal of Consulting and Clinical Psychology*, 63, 579-584.
- Tornatzky, L. G., Fergus, E. O., Avellar, J. W., & Fairweather, G. W. (1983). *The process of technological innovation: Reviewing the literature.* Washington, DC: National Science Foundation.
- U.S. Department of Health and Human Services. (1983, December). *Alcohol and health (5th Special Report to the U.S. Congress).* Rockville, MD: National Institute on Alcohol Abuse and Alcoholism.
- Wren, C. S. (1997, September 9). **Drugs common in schools, survey shows.** *New York Times*, p. A12.

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