



Evidence-Based and Evidence-Informed Practices in Classroom-Based Curriculum for Substance Use Prevention Education: A Brief Review

Prepared for: Vancouver Coastal Health
Prepared by: Arbor Educational & Clinical Consulting Inc.

July 2011

Document Overview: About this Review

Purpose

This report provides a brief review of relevant literature on evidence-informed and evidence-based practices for classroom-based curriculum for substance use prevention education. While there exists literature regarding curriculum for targeted (e.g., children of parents who have substance use issues) and indicated groups (e.g., adolescent girls who are using excessive amounts of alcohol), the focus of this review is universal education. Peer-reviewed articles included in this review were published between the years 2005 and 2011. Reports included in this review were published between 2004-2010.

Method

Articles were retrieved from PsycINFO. First, a broad search for the keywords, “education”, “schools”, and “substance” retrieved 1,351 articles. The vast majority of these publications were not directly related to the purpose of this review, for example articles that focused on drug treatment, adult populations, effects of prenatal or perinatal drug exposure, etc. were excluded. A small number of articles regarding school or community-wide prevention efforts are included; however, the primary aim of this review is to inform best practices in *classroom-based curriculum for substance use prevention education*. These exclusion criteria resulted in a final list of 26 articles. Second, a PsycINFO search using the terms “curriculum”, “drug”, and “education” was undertaken. This resulted in an additional 17 articles (from 253 articles). Finally, four reports on prevention education were also included from four different government and non-government websites. In the end, 47 articles and reports included in this review.

Key Considerations in Curriculum Development

- There is a paucity of longitudinal research in the area of substance use prevention. As a result, there is not a great deal of evidence indicating that substance use prevention programs have been successful in reducing substance use over time; there is considerable research indicating that developmentally appropriate and well-implemented programs can have positive short-term benefits.
- There is some support that brief curriculum exposure (i.e., a limited number of lessons) can increase knowledge but there is limited evidence that brief exposure changes behaviour and attitudes in relation to substance use.
- Although there are several evidence-informed curricula for classroom-based substance use prevention, two of the greatest challenges to achieving successful outcomes are poor implementation and limited credibility/acceptance of the facilitator in the eyes of youth.

- Poorly designed programs have been found to be harmful to child and youth development in that they lead to increases in substance use (e.g., DARE).

Review Organization

Part I: Summary of Findings (four tables outline key findings in the areas of content; facilitator/teacher effectiveness; curriculum implementation; and other school factors influencing outcomes.

Part II: Annotated Bibliography of Peer-Reviewed Literature¹

Part III: Annotated Bibliography of Reports

Recommended Steps in Curriculum Development

1. Establish goals for curriculum (i.e., knowledge vs. behaviour change or both)
2. Develop curriculum based on research evidence.
3. Engage youth at target age group in order to solicit feedback on content and activities.
4. Revise curriculum based on youth feedback
5. Pilot curriculum with trained facilitators with close attention to dosage and curriculum adherence
6. Evaluate curriculum
7. Revise curriculum based on evaluation findings
8. Implement curriculum more widely with well-trained facilitators committed to a high level of implementation
9. Evaluate (process and outcome) curriculum in order to determine whether it is achieving the intended outcomes.

¹ With the exception of four articles/books (access to journals limited or abstract is from a book), articles and reports are included on a CD. The missing articles/books are noted by a '*’.

Part One: What Works in Curriculum-Based Education

Evidence-Informed Curriculum Content

More Effective	Less Effective
<ul style="list-style-type: none"> Curriculum targets substance use prevention at an age in which youth have not likely started or may just be beginning to use specific substances. Age varies for different substances in different communities. Timing is critical for impact. 	<ul style="list-style-type: none"> Developmental mismatch regarding curriculum content and target age. For example, waiting until grade 11 students about the dangers of alcohol misuse or focusing all prevention efforts on one substance only.
<ul style="list-style-type: none"> Using language that is relevant to youth. 	<ul style="list-style-type: none"> Using archaic language or 'adult' vernacular.
<ul style="list-style-type: none"> Focusing on the risk and protective factors (e.g. social influence, mental health) that promote the initiation and early stages of substance use. 	<ul style="list-style-type: none"> Using fear-based tactics or focusing on morality to attempt to prevent youth substance use rather than fostering an understanding of underlying factors that lead to substance use.
<ul style="list-style-type: none"> Teaching refusal and negotiation skills (in conjunction with other effective skills). 	<ul style="list-style-type: none"> Only providing information about substance use.
<ul style="list-style-type: none"> Enhancing social and emotional competence/life skills (e.g., decision-making skills; assertiveness skills; emotion management). 	<ul style="list-style-type: none"> Focusing on teaching values around decisions to use/not use substances rather than build skills and knowledge that equip youth to think critically about their decisions.
<ul style="list-style-type: none"> Correcting normative expectations regarding the prevalence of drug use. 	<ul style="list-style-type: none"> Conveying the idea that drug use is the norm among youth.
<ul style="list-style-type: none"> Addressing the context in which substance use occurs (e.g., at parties; with a certain peer group; within sexual encounters). 	<ul style="list-style-type: none"> Not relating substance use to the context of the lives of youth.
<ul style="list-style-type: none"> Culturally relevant curriculum. 	<ul style="list-style-type: none"> Absence of cultural considerations.
<ul style="list-style-type: none"> Incorporating critical analysis of the role of the media in promoting substance use. 	<ul style="list-style-type: none"> Omitting the discussion and analysis of the role of the media.
<ul style="list-style-type: none"> Focusing on school self-esteem, family self-esteem, and peer self-esteem as separate constructs along with other skills and attitudes. 	<ul style="list-style-type: none"> Focusing only on raising global self-esteem with little other program content.
<ul style="list-style-type: none"> For younger elementary school students, focus on teaching resistance and other skills first before focusing on specific substances. 	<ul style="list-style-type: none"> Teaching about various substances which can lead to the perception among younger youth that substance use is normative.
<ul style="list-style-type: none"> Integrating curriculum across subject areas. 	<ul style="list-style-type: none"> Isolating curriculum to one area of schooling.
<ul style="list-style-type: none"> Focus on the range of substances relevant to youth. 	<ul style="list-style-type: none"> Focus efforts on only one substance.

Considerations

- *“Meta-analytic studies have found that prevention programmes that combine social resistance skills and competence enhancement approaches are among the most effective approaches.” (Botvin, 2007)*
- *“Reviews of the evidence-base suggest that when drug education programmes include a combination of knowledge, social and life skills, normative approaches and negotiation skills, they can produce significant reductions in drug use.” (Cahill, 2007)*
- *“While self-esteem does not seem to be a major factor in the use of various substances, it does appear to play a role. Program developers who wish to address self-esteem should focus on specific aspects of self-esteem [school, home, family], measure whether self-esteem was actually enhanced by the program, and examine whether an enhancement of self-esteem was related to a decrease in measures of drug use.” (Donnelly, 2008)*
- *In his systematic review of the literature, Cuijpers (2002a, 2002b, 2003) examined the characteristics that determine the effectiveness of drug-prevention programmes. From this analysis seven evidence-based quality criteria were derived: the effects of a programme should have been empirically assessed; programmes using interactive delivery methods are more effective; programmes based on the ‘social influence model’ are the most effective; focus on norms, commitment and intentions not to use are effective components; the addition of community interventions increases the effects of school-based programmes; and the use of peer leaders and adding life skills to programmes may strengthen the preventive effects. In general, these results are in line with other systematic reviews (Faggiano et al., 2005; Tobler et al., 2000). (Van Der Kreeft, 2009)*
- *“A potential caveat to introducing substance use prevention at the preadolescent period is the unintended consequence that preadolescents may acquire increased perceptions of peer alcohol, tobacco and other drug (ATOD) use (National Research Council and Institute of Medicine [IOM], 2009). For preadolescents, program curricula may benefit from first focusing on resistance skills that illustrate exemplary responses and communication with examples of peer pressure about non-drug related activities, and avoid mention of explicit drug information. This strategy may avoid the potential boomerang effect of increased ATOD descriptive norms. Including only age-appropriate substance use prevention concepts may help implementers avoid the potential pitfall of producing unintended adverse outcomes in relation to ATOD attitudes and expectancies.” (Hopfer, 2010)*

Facilitator/Teacher Effectiveness

More Effective	Less Effective
<ul style="list-style-type: none"> • Providing ongoing coaching to engaged teachers in order to support the implementation of the curriculum. 	<ul style="list-style-type: none"> • Attempting to coach teachers who do not support the curriculum.
<ul style="list-style-type: none"> • Incorporation of the role of culture as it relates to substance use prevention education. 	<ul style="list-style-type: none"> • Lack of acknowledgement of the role of culture in substance use prevention.
<ul style="list-style-type: none"> • Staff buy-in with regards to curriculum content (i.e., do they agree with the approach and messages?). 	<ul style="list-style-type: none"> • Staff are asked to teach a curriculum that includes an approach in which they do not believe.
<ul style="list-style-type: none"> • Interactive staff training sessions to allow staff to increase implementation fidelity and practice instructional techniques. 	<ul style="list-style-type: none"> • Staff training that is lecture-oriented and does not allow time for hands on learning and practicing of activities.
<ul style="list-style-type: none"> • Staff who teach the curriculum are seen as credible and trustworthy in the eyes of youth. 	<ul style="list-style-type: none"> • Staff who teach the curriculum are perceived by youth as not having the knowledge or background that would allow them to be accurately convey the curriculum. Staff whom youth are unlikely to have meaningful conversations with due to lack of trust.

Considerations....

“Perceptions of the instructor significantly affect refusal, communication and decision-making skills, normative beliefs, perceived consequences of use, and substance use.” (Stephens, 2009)

Curriculum Implementation

More Effective	Less Effective
<ul style="list-style-type: none"> High levels of implementation (adherence to the activities/methods and dosage) of the curriculum. 	<ul style="list-style-type: none"> Low levels of implementation (e.g., picking and choosing content and activities of the curriculum to implement).
<ul style="list-style-type: none"> Positive classroom environment (e.g., safe classroom environment in which the curriculum is implemented). 	<ul style="list-style-type: none"> Negative classroom environment (e.g., presence of bullying, behavioural challenges).
<ul style="list-style-type: none"> Intensive (11-30 lessons) and long-term forms of delivery (e.g., dose of curriculum each year that matches the developmental level of youth) to shift skills, attitudes and behaviours. 	<ul style="list-style-type: none"> One session only curriculum (if goal is an increase in knowledge only, a short term program has been shown to increase knowledge and less so intentions but not necessarily behaviour).
<ul style="list-style-type: none"> Using interactive teaching styles (e.g., facilitated discussion; structured small group activities; critical thinking; role-playing). 	<ul style="list-style-type: none"> Teacher centred delivery.
<ul style="list-style-type: none"> Incorporating visual content. 	<ul style="list-style-type: none"> Limited learning modalities.
<ul style="list-style-type: none"> Curriculum delivered to smaller class sizes. 	<ul style="list-style-type: none"> Large auditorium-like lectures.
<ul style="list-style-type: none"> Incorporating substance use prevention curriculum with subjects experienced as positive for youth (e.g., teaching youth about substances using science). 	<ul style="list-style-type: none"> Incorporating substance use prevention education in subjects viewed negatively by youth.
<ul style="list-style-type: none"> Adequate support for staff in terms of planning, prep time and resources to implement curriculum. 	<ul style="list-style-type: none"> Limited or no time for staff to plan lessons. Limited resources to implement curriculum.
<ul style="list-style-type: none"> Delivery of curriculum by a trained outside facilitator or a trained peer. 	<ul style="list-style-type: none"> Delivery of curriculum by facilitator who is neither trained nor has a background in the content area.
<ul style="list-style-type: none"> Delivered by a teacher who has received extensive training in content and approach to delivery. 	<ul style="list-style-type: none"> Delivery by teacher who has received no or minimal training and lacks content knowledge and comfort with the content.

Considerations

- “Ultimately, it is hoped that programmes that show effects in the early stages can be packaged and widely disseminated to prevention practitioners (i.e., end-users) for use in real-world school settings. At this stage, however, implementation fidelity typically suffers and key programme components are modified in most situations (Dane & Schneider, 1998). A large number of studies have shown that evidence-based prevention programmes are generally not as effective when delivered by prevention practitioners in the field, compared to their original efficacy or levels of effectiveness.” (Botvin, 2007)
- “With fidelity of implementation under research conditions as the standard referent, it would be unreasonable to expect providers to achieve complete fidelity on all domains, which has not been demonstrated even under the most rigorous research conditions. Yet, reasonably high expectations are appropriate and necessary if curricula are to have their intended effects on

youth substance use. Our results suggest that until higher levels of adherence to content and delivery strategies can be achieved, expectations must be tempered. The findings also suggest the need for continued emphasis on fidelity in program materials, training and on-going technical support with particular attention to supporting use of the interactive delivery methods called for by the programs' developers. Perhaps most importantly, we need research that examines why providers do not deliver curricula as intended to inform both curriculum development and training for existing programs." (Ennett, 2011)

- "Teachers' use of student-centered delivery skills, notably accepting students' ideas during classroom discussion and asking a variety of questions, predicted key program outcomes. Specifically, student-centered delivery skills were associated with improvements in students' sense of idealism about their future and their beliefs that substance use was not normal among their peers, as well as with marginal decreases in marijuana use." (Giles, 2010)
- "There is a possibility of detrimental effects resulting from substance use education programmes, studies by Ellickson et al. (1993), Hecht et al. (1993), Lynam et al. (1999), and Needham (1999) found negative effects upon cigarette consumption, attitudes towards substance use, self-esteem, and problem-solving and decision-making skills. These findings challenge the assumption that health promotion can do no harm even if it does no good, and reinforce the need for good quality evaluations of such programmes to ensure that no harm is being caused to young people as a result." (Buckley, 2007)
- "Study findings indicate that student's attitudes toward their teachers, their perceptions of their teachers' skills, and their engagement in a prevention curriculum all contribute to the achievement of immediate program objectives. These variables are related to several mentioned by Dusenbury and her colleagues (2005) as critical to prevention effectiveness, namely "teacher enthusiasm" and "student engagement." Other characteristics that have been assessed include teachers' "respectfulness," "ability to understand students," and "likeability" (Rohrbach, Dent, Skara, Sun, & Sussman, 2007), as well as teachers' level of understanding of their students' world (Hammond, Sloboda, Tonkin, Stephens, Teasdale, Grey, et al., 2008), "caring" and "support" (Wentzel, 1997), and "credibility" (Tonkin et al., 2009).

School Environmental Factors

More Effective	Less Effective
<ul style="list-style-type: none">• High levels of support by administration and staff for the curriculum implementation.	<ul style="list-style-type: none">• Low levels of support by administration.
<ul style="list-style-type: none">• Having classroom curriculum as part of a integrated and well-implemented universal program.	<ul style="list-style-type: none">• Only offering classroom curriculum with no other prevention components.
<ul style="list-style-type: none">• Curriculum aligns with school policy on substance use.	<ul style="list-style-type: none">• Mismatch between what is taught in the classroom and school policy.

Part Two: Annotated Bibliography of Peer-Reviewed Literature

Bonell, C., Sorhaindo, A. et al. (2010). "A pilot whole-school intervention to improve school ethos and reduce substance use." *Health Education* **110**(4): 252-272.

Purpose: Evidence from the USA/Australia suggests whole-school interventions designed to increase social inclusion/engagement can reduce substance use. Completeness of implementation varies but contextual determinants have not been fully explored. Informed by previous interventions, the paper aims to examine these topics in an English pilot of the Healthy School Ethos intervention. Design/methodology/approach: This intervention, like previous interventions, balanced standardization of inputs/process (external facilitator, manual, needs-survey and staff-training delivered over one year to enable schools to convene action-teams) with local flexibility regarding actions to improve social inclusion. Evaluation was via a pilot trial comprising: baseline/follow-up surveys with year-7 students in two intervention/comparison schools; semi-structured interviews with staff, students and facilitators; and observations. Findings: The intervention was delivered as intended with components implemented as in the USA/Australian studies. The external facilitator enabled schools to convene an action-team involving staff/students. Inputs were feasible and acceptable and enabled similar actions in both schools. Locally determined actions (e.g. peer-mediators) were generally more feasible/acceptable than pre-set actions (e.g. modified pastoral care). Implementation was facilitated where it built on aspects of schools' baseline ethos (e.g. a focus on engaging all students, formalized student participation in decisions) and where senior staff led actions. Student awareness of the intervention was high. Originality/value: Key factors affecting feasibility were: flexibility to allow local innovation, but structure to ensure consistency; intervention aims resonating with at least some aspects of school baseline ethos; and involvement of staff with the capacity to deliver. The intervention should be refined and its health/educational outcomes evaluated. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Botvin, G. J. and Griffin, K.W. (2007). "School-based programmes to prevent alcohol, tobacco and other drug use." *International Review of Psychiatry* **19**(6): 607-615.

Substance use and abuse are important public health problems in the USA and throughout the world. In many developed countries, the initial stages of substance use typically include experimentation with alcohol, tobacco, or marijuana with one's peer group during adolescence. While there have been gradual decreases in the use of these substances in recent years among youth in the USA and other countries, increases have been observed in the use and misuse of other substances, such as the misuse of prescription drugs and over-the-counter cough medications in the USA. From a developmental perspective, data shows that rates of alcohol, tobacco, marijuana, and other illicit drug use typically escalate during adolescence and peak during young adulthood, corresponding with the increased freedom and independence of this time of life. Substance use decreases for most young people as they take on adult responsibilities, although a proportion will continue or increase their use and develop substance use problems. Given what we know about the onset and progression of substance use, implementing preventive interventions during early adolescence is critical. Most drug prevention or education programmes take place in school settings. A variety of theory-based school-based drug prevention programmes have been developed and tested. The most effective programmes are delivered interactively and teach skills to help young people refuse drug offers, resist pro-drug influences, correct misperceptions that drug use is normative, and enhance social and personal competence skills. A key challenge is to identify mechanisms for the wide dissemination of evidence-based drug preventive interventions and ways to train providers to implement programmes effectively and thoroughly. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

*Brown, B., Hernandez, V.R. et al. (2011). Connections: A 12-session psychoeducational shame resilience curriculum. *Shame in the therapy hour*. Washington, DC US, American Psychological Association: 355-371.

(from the chapter) The Connections curriculum was developed in 2006 as a way to address both the needs of the clinical community and the needs of the lay community (Brown, 2009). The curriculum was originally piloted at the Menninger Clinic in Houston (2006-2007) and the Houston Area Women's Center (2006-2007). It has since been facilitated in a variety of settings across the United States and used with various populations, including residential psychiatric patients, residential substance abuse clients, high school students, women and men in state prisons, and nonresidential substance use groups of men and women. The goal of this chapter is to briefly explain the research foundation of Connections, then to walk readers through the curriculum so that they may better understand how we introduce and explain shame and how resilience is taught and modeled through the psychoeducational process. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (chapter)

Brown, S., Birch, D. et al. (2007). "Effects of a single-lesson tobacco prevention curriculum on knowledge, skill identification and smoking intention." Journal of Drug Education **37**(1): 55-69.

One in five students report experimenting with tobacco before the age of 13 and most prevention efforts take place in the school setting. This study measures the effect of a single-lesson tobacco prevention curriculum, conducted by a health education center, focusing on knowledge of tobacco, ability to identify refusal techniques, and intent not to smoke. Data were collected, via electronic keypads, from students visiting a non-school, health education center in Michigan (n = 704 intervention and 85 comparison). Contingency table Chi-squared tests and t-tests demonstrated that a single lesson can improve general knowledge and ability to identify appropriate refusal techniques. Improvement in intent not to smoke was not significant because both groups had very high intent prior to implementation. Similar to results from other programs, multivariate logistic regression of gender, general knowledge, and skill identification revealed that only the skill variable was associated with intent not to smoke at pretest. Recommendations are given for further research and for designing more effective curricula or programs. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Buckley, E. J. and White, D.G. (2007). "Systematic review of the role of external contributors in school substance use education." Health Education **107**(1): 42-62.

Purpose: A literature review was conducted to evaluate the effectiveness of external contributors (anyone other than a teacher at the school) in delivering school-based drug, alcohol and tobacco education (substance use education) programmes. Design/methodology/approach: The review focused upon literature published from 1990 onwards in English. Published reports were identified via electronic searches, supplemented by hand searching of relevant journals. Relevant organisations and individuals were contacted to identify low circulation, difficult to acquire (grey) literature. Judgements were made of methodological quality and only reports judged to be methodologically sound or better are included in this paper. Findings: A total of 114 reports were included in the review (53 published, 61 unpublished), 42 of which were considered methodologically sound. In total 16 types of contributor were evaluated (although only nine in methodologically sound studies) including nurses, police officers, theatre groups, peers and researchers. There was insufficient evidence to judge a particular type of contributor as most effective at delivering substance use education programmes in terms of behavioural, knowledge, intention or mediating outcome measures, although peers show promise. However, process data revealed that pupils enjoy content delivered by external contributors, which is important, as pupils are more likely to attend to information that is enjoyable. Practical implications: The paper finds that external contributors should be used in a supplementary role in substance use education in a manner reflecting their expertise, when that expertise maps onto the aims and content of the drug education planned by the school. Originality/value: With over 80 percent of schools in the USA and the UK using external contributors to deliver substance use education, this paper highlights best practice guidance for their use. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Buhler, A., Schroder, E. et al. (2008). "The role of life skills promotion in substance abuse prevention: A mediation analysis." Health Education Research **23**(4): 621-632.

Research has shown that life skills programs are the most effective single activity in school-based substance abuse prevention. However, little is known about the processes through which they are effective. This study examines whether an evidence-based prevention program targeting general competence is effective through the promotion of knowledge about life skills and enhanced related behaviors. Based on a sample of 442 fifth graders participating in a quasi-experimental prevention study, as expected, mediation analyses revealed that increased knowledge about life skills paralleled an increase in students' distant attitudes toward alcohol and nicotine use. Unexpectedly, behaviors manifesting enhanced life skills were found not only among program participants who remained experimental/non-smokers or stopped smoking but also among smokers. In general, findings suggest that favorable prevention outcomes may be influenced through building knowledge about general life skills. The notion of uniform mechanisms of effectiveness in prevention programs is discussed. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Cahill, H. W. (2007). "Challenges in adopting evidence-based school drug education programmes." Drug and Alcohol Review **26**(6): 673-679.

Issues: The paper discusses the school-based challenges that may moderate the implementation of evidence-based drug education in schools. Approach: Knowledge about what constitutes an effective evidence-based drug education programme is discussed in relation to the challenge of delivery in the school setting. Research demonstrates that drug education should be engaging, incorporate interactive learning strategies, stimulate higher-order thinking, promote learning and be transferable to real life circumstances. This may difficult to accomplish in practice, as a range of contextual challenges and ideological assumptions may moderate the teacher's capacity to deliver a programme of this nature. Key Findings: Collaborative learning strategies are not the norm in schools and therefore teachers may find interactive drug education programmes difficult to adopt. Conflicting ideological assumptions about effective epistemological approaches to drug education may also direct the way in which teachers modify programmes in the local context. Implications: Teachers need professional training and support if they are to adopt successfully evidence-based school drug education programmes. This support may be enhanced if it includes whole school approaches to effective pedagogy and the development of pro-social classroom environments. Conclusion: Drug education research should take account of the complexities of implementation in the school setting and investigate further the professional and organisational support that teachers require in order to maintain high-quality provision in the school context. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Cordero, E. D., Israel, T. et al. (2010). "Impact of instructor and course characteristics on the effectiveness of curriculum infusion." Journal of American College Health **59**(2): 75-81.

Objective: This study assessed the impact of Curriculum Infusion (CI) on undergraduates' knowledge, attitudes, and behaviors regarding alcohol and other drug (AOD) use. The related effects of students' perceptions of instructors' credibility and immediacy were also examined. Participants: Participants were 309 undergraduates enrolled in 14 CI classes between Winter 2003 and Spring 2004. Methods: In a pretest-posttest design, participants were surveyed about their substance use, behavioral consequences of substance use, knowledge, and attitudes about alcohol, and their perceptions of the credibility and immediacy of their CI course instructors. Results: Findings indicate that students who perceived their CI instructors as more credible and more immediate were more knowledgeable about alcohol and had healthier attitudes about substance use. Additionally, course size was found to contribute to CI's effectiveness. Conclusion: CI provides faculty with an effective way to make a difference not only in their students' education but also in their health and well-being. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

deKoven, A. (2007). "The importance of building and maintaining trust in alcohol, tobacco, and other drug education classrooms and hurdles to open communication." Journal of Alcohol and Drug Education **51**(3): 27-56.

This research examines the importance of trust in the classroom, and answers the following questions: 1) Is trust important to create and maintain in the classroom? 2) What is the significance of trust between a teacher and a student? and 3) Do students trust their drug and alcohol educators? In-depth interviews were conducted with 38 middle school students. Analysis of the transcripts reveals the importance of trust in the classroom environment. Trust is important not only between teachers and students, but also between students and their peers. In addition, hurdles to the effective transmission of important information about alcohol, tobacco, and other drugs (ATOD) were discovered. Chief among these revelations was the discovery that students perceive that asking questions about ATOD is tantamount to a tacit admission of guilt for having used or for contemplating using controlled substances. Implications for designers of curricula, drug and alcohol educators, and teachers of other sensitive subjects are discussed. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Donnelly, J., Young, M. et al. (2008). "Area specific self-esteem, values, and adolescent substance use." Journal of Drug Education **38**(4): 389-403.

The use of illicit and licit drugs continues to be a major public health concern. Many prevention and drug education programs address this issue by attempting to enhance self-esteem. The idea is that increased levels of self-esteem will serve as a protective factor in decreasing the motivation and increasing the resistance to use drugs. This study explored the relationship between area specific self-esteem and adolescent substance use. Participants (n = 700) completed a self-report questionnaire which included items measuring the use and expected use of selected substances. Results indicated significant differences in home and school self-esteem scores between users/expected users and non-users of a given substance for all 14 behavioral measures. Additionally, the peer, home, and school sub-scales as a set were found to distinguish between users and non-users for all 14 behavioral measures. Results should be of value to those designing prevention programming. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Dusenbury, L., Hansen, W.B. et al. (2010). "Coaching to enhance quality of implementation in prevention." Health Education **110**(1): 43-60.

Purpose - The purpose of this paper is to describe the topics covered by coaches assisting teachers implementing a research-based drug prevention program and explore how coaching affects student outcomes. Design/methodology/approach - The All Stars drug prevention curriculum is implemented by 16 urban teachers who received four coaching sessions. Two coaches participated. Coaches are interviewed by investigators to assess topics covered. Students completed pre-test-post-test measures of mediators and substance use behaviours. Findings - The average teacher is coached on 11.7 different topics, out of a total of 23 topics. Coaching topics most heavily emphasized include: introduction and wrap up; time management; general classroom management; teacher's movement around the class; asking open-ended questions; using students' questions, comments and examples to make desired points; general preparation; engaging high-risk youth; reading from the curriculum; implementing activities correctly; focusing on objectives and goals; maintaining a focus on the task; and improving depth of understanding. Seven coaching topics are found to relate to changes in student mediators and behaviour. Research limitations/implications - The current study is exploratory. Future research should explore how teachers develop the particular skills required by prevention programs and how coaches can assist them. Practical implications - Five levels of skill development are postulated, which coaches may address: fundamental teaching skills, mechanics of program delivery, development of an interactive teaching style, effective response to student input, and effective tailoring and adaptation. Originality/value - The paper is one of a very few studies that explores how coaching impacts outcomes in substance abuse prevention. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

*Elliott, K. (2008). "Danger, control, and responsibility: The hidden curriculum of drug and alcohol education." Sexuality Research & Social Policy: A Journal of the NSRC **5**(2): 12-22.

This article reports on a study that examined drug and alcohol education in 2 middle-school health classes and explored how this curriculum, while teaching about the dangers of drug and

alcohol abuse, also taught about sex, sexuality, and gender. Lessons about sexual relations embedded in this curriculum emphasized sexual assault, control of the female body, and unequal sexual responsibility and contributed to students' understandings of their own gendered identities, as well as of the relative positions of men and women in society. Study findings suggest that drug and alcohol education can convey strong messages about gender relations, sex, and sexuality that go largely unnoticed by researchers, communities, and even educators themselves. Failure to recognize the ways in which assumptions about gender and sexuality interact with all areas of a health curriculum may contribute to the continued reproduction of dominant discourses of gender inequality. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Ennett, S. T., Haws, S. et al. (2011). "Evidence-based practice in school substance use prevention: Fidelity of implementation under real-world conditions." Health Education Research **26**(2): 361-371. Fidelity of program implementation under real-world conditions is a critical issue in the dissemination of evidence-based school substance use prevention curricula. Program effects are diminished when programs are implemented with poor fidelity. We assessed five domains of fidelity: adherence, exposure (dosage), quality of delivery, participant responsiveness and program differentiation (lack of contamination from other programs) in a subset of respondents (N = 342) from a national random sample of public schools with middle school grades (N = 1721). Respondents taught 1 of 10 evidence-based universal substance use prevention programs as their primary program during the 2004-05 school year. Their responses to survey questions about their recent implementation practices indicated that fidelity was high for quality of delivery and participant responsiveness, low for program differentiation and modest for adherence and exposure - the two core domains of fidelity. Results suggest the need for continued emphasis on fidelity in program materials, trainings and on-going technical support. Particular attention should be paid to supporting use of interactive delivery strategies. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

*Ennett, S. T., Haws, S. et al. (2010). The school context of adolescent substance use. Handbook of drug use etiology: Theory, methods, and empirical findings. Washington, DC US, American Psychological Association: 443-459.

(from the chapter) The social experience of adolescence as distinct from childhood and young adulthood has been shaped and sustained by public education. We examine how schools, both as peer-oriented social systems and as formally organized institutions with adult governance, affect development of adolescent alcohol, tobacco, and other drug use. Although schools have been the primary venue for substance use prevention programs, the school context has typically not been a focus of research concerned with the etiology of adolescent substance use. Yet from the research evaluating school substance use prevention programs, we know that schools differ in the prevalence of student substance use, suggesting that characteristics of schools may account for these differences. From the standpoint of social ecological theories, which are increasingly prevalent in guiding understanding of youth risk behaviors, part of the explanation for these school differences must reside in characteristics of schools. We (a) review theories that suggest how schools might influence adolescent substance use; (b) visit the evidence that schools differ appreciably in prevalence of substance use; (c) address methodological challenges to determining whether those prevalence differences are meaningful in an etiologic sense, specifically, the challenges in separating school characteristics that influence substance use from attributes of the students populating schools; (d) describe methodological approaches to identifying school effects on adolescent substance use; and (e) review the empirical evidence supporting school effects on adolescent substance use. We conclude with an assessment of whether schools matter in explaining adolescent drug use. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (chapter)

Epstein, J., Collins, K.K. et al. (2007). "The Doubles: Evaluation of a substance abuse education curriculum for elementary school students." Journal of Child & Adolescent Substance Abuse **16**(4): 1-22. "The Doubles," funded by the National Institute on Drug Abuse, is a seven-episode series of media tools designed to teach third and fourth-grade students about the science of drug

addiction. The program's curriculum was delivered through a set of DVDs, interactive CD-ROMs, workbooks, or an Internet Site. Results indicate that although the interventions were successful in teaching students about the biological bases of substance abuse, they had little effect on student attitudes. Implications for future studies are discussed. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Giles, S. M., Pankratz, M.M. et al. (2010). "Teachers' delivery skills and substance use prevention program outcomes: The moderating role of students' need for cognition and impulse decision making." Journal of Drug Education **40**(4): 395-410.

The purpose of this study was to extend the literature in both substance use implementation and persuasive health communication by examining the extent to which students' need for cognition and impulsive decision-making moderated the relationship between teachers' classroom communication behavior and program outcomes in an evidence-based middle school substance use prevention curriculum. Participants included 48 teachers and their respective 7th grade students who participated in a randomized trial testing the effectiveness of personal coaching as a means to improve the quality with which teachers implemented the All Stars curriculum. Need for cognition and impulse decision-making were both associated with positive changes in lifestyle incongruence and commitments to not use substances for students whose teachers displayed greater interactive teaching. Further, need for cognition was associated with lower alcohol use rates while impulse decision making related to lower rates of marijuana use in classes with interactive teaching. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Hanley, S., Ringwalt, C. et al. (2009). "Implementing evidence-based substance use prevention curricula with fidelity: The role of teacher training." Journal of Drug Education **39**(1): 39-58.

It is widely recognized that teacher training affects the fidelity with which evidence-based substance use prevention curricula are implemented. We present the results of a 2005 survey of teachers from a nationally representative sample of 1721 public middle schools in the U.S. (78.1% response rate). We measured fidelity along two dimensions (adherence and dose) and also assessed the number of hours, recency, and perceived effectiveness of teachers' training, as well as the degree to which adherence was emphasized during training. Among teachers using evidence-based curricula, 35.3% reported following their curriculum guide very closely. The average proportion of lessons taught was 64.9%, and only 30.2% of teachers taught all the lessons in their curriculum. Analyses revealed that teachers whose training emphasized adherence were 5 times as likely to be more adherent. We present recommendations for training-related factors that may increase fidelity of implementation. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Harthun, M. L., Dustman, P.A. et al. (2008). "Culture in the classroom: Developing teacher proficiency in delivering a culturally-grounded prevention curriculum." The Journal of Primary Prevention **29**(5): 435-454.

The authors describe the training model used to develop proficiency in teaching a culturally-grounded prevention curriculum. Teachers believed it vital to discuss substance use and considered culture and ethnicity central to students' lives, although few had experience teaching prevention curricula. Training effects were evaluated using three datasets. Analyses showed that training should emphasize teaching adult learners; encompass culture from many perspectives; address the teaching of prevention curricula, and emphasize fidelity as imperative. Trainers found the embedded focus on culture in keepin' it REAL essential to success. Teachers learned that a prevention curriculum can be instructionally engaging while theory-driven and academically rigorous. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Hecht, M. L., Elek, E. et al. (2008). "Immediate and short-term effects of the 5th grade version of the keepin' it real substance use prevention intervention." Journal of Drug Education **38**(3): 225-251.

This study assessed the immediate and short-term outcomes of adapting a culturally-grounded middle school program, keepin' it REAL, for elementary school students. After curriculum adaptation, 10 schools were randomly assigned to the intervention in 5th grade with follow-up

boosters in 6th grade; 13 schools were randomly assigned to the control condition, implementing the school's pre-existing substance use prevention programming. Students (n = 1,566) completed a questionnaire prior to curriculum implementation and follow-up questionnaires toward the end of 5th and 6th grade. The 5th grade kiR curriculum generally appeared no more effective than the control schools' programming in changing students' resistance or decision-making skills; substance use intentions, expectancies, or normative beliefs; or lifetime and recent substance use. Such findings have implications for the age appropriateness of school-based programs. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Heyne, T. and Bogner, F.X. (2009). "Strengthening resistance self-efficacy: Influence of teaching approaches and gender on different consumption groups." Journal of Drug Education **39**(4): 439-457. Our study focused on strengthening the individual self-efficacy of low achieving 8th graders reducing drug-specific peer pressure through theoretical and practical training. The subject of the intervention was based on a substance-specific life skills program offering both teacher-centered and student-centered teaching approaches. A cluster analysis identified four consumption groups in our pre-test setting: (1) A "potentially curious" sample; (2) an "actually curious" sample; (3) an "experimenter" sample; and (4) a "consumer" sample. Self-efficacy was measured three times in a pre-, post-, and retention-test design. Only the "potentially curious" sub-sample showed higher resistance self-efficacy, boys and girls revealed no differences. Altogether, a short- and middle-term consistent increase was detected in both teaching methods. Consequences to increase the efficiency of drug prevention measurements are being discussed. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Holtz, K. D. and Twombly, E.C. (2007). "A preliminary evaluation of the effects of a science education curriculum on changes in knowledge of drugs in youth." Journal of Drug Education **37**(3): 317-333. Drug and alcohol use among youth remains at pervasively high levels, but students are receiving less school-based prevention. Infusing health information into core curricula may be a valuable prevention approach. Therefore, behavior change theory was used to develop a science education curriculum on drugs for fourth- and fifth-grade students, which was then evaluated using a pretest/posttest quasi-experimental design. Exposure to the curriculum was associated with a change in knowledge; other characteristics like grade level also played a role. More positive attitudes toward science at pretest predicted greater knowledge change, and students who knew less at the start showed a greater change in knowledge. Results of this evaluation may support the efficacy of the curriculum and the utility of combining behavior change theory with educational approaches. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Hopfer, S., Shin, Y. et al. (2010). "A review of elementary school-based substance use prevention programs: Identifying program attributes." Journal of Drug Education **40**(1): 11-36. This article takes a systematic approach to reviewing substance use prevention programs introduced in elementary school (K-6th grade). Previous studies evaluating such programs among elementary school students showed mixed effects on subsequent substance use and related psychosocial factors. Thirty published evaluation studies of 24 elementary school-based substance use prevention programs were reviewed. The study selection criteria included searching for program evaluations from 1980 to 2008. Among 27 evaluation studies that examined program effects on substance use, 56% (n = 15) found significant decreases. In addition, programs most often demonstrated effects on increasing negative substance use attitudes, increasing knowledge, decreasing perceptions of prevalence rates (i.e., descriptive norms), and improving resistance skills. These results have implications for the appropriateness and value of introducing substance use prevention programs to youth in elementary school. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Inman, D. D., van Bakergem, K.K. et al. (2011). "Evidence-based health promotion programs for schools and communities." American Journal of Preventive Medicine **40**(2): 207-219. Healthy People 2020 includes an objective to increase the proportion of elementary, middle, and senior high schools that provide comprehensive school health education to prevent health

problems in the following areas: unintentional injury; violence; suicide; tobacco use and addiction; alcohol or other drug use; unintended pregnancy, HIV/AIDS, and sexually transmitted infections (STI); unhealthy dietary patterns; and inadequate physical activity. These specific goals are part of the efforts of Healthy People 2020 to increase the proportion of elementary, middle, and senior high schools that have health education goals or objectives that address the knowledge and skills articulated in the National Health Education Standards. A focus on Pre-K through 12 health education is a prerequisite for the implementation of a coordinated, seamless approach to health education as advocated by the Healthy People Curriculum Task Force and incorporated into the Education for Health framework. To help accomplish these goals, this article views the role of education as part of the broader socioecologic model of health. A comprehensive literature review was undertaken to identify evidence-based, peer-reviewed programs, strategies, and resources. The results of this review are presented organized as sexual health, mental and emotional health, injury prevention, tobacco and substance abuse, and exercise and healthy eating. Evidence-based implementation strategies, often considered the missing link, are recommended to help achieve the Healthy People 2020 objective of increasing the prevalence of comprehensive school health education programs designed to reduce health risks for children. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Lennox, R. D. and Cecchini, M.A. (2008). "The NARCONON drug education curriculum for high school students: A non-randomized, controlled prevention trial." Substance Abuse Treatment, Prevention, and Policy **3**.

Background: An estimated 13 million youths aged 12 to 17 become involved with alcohol, tobacco and other drugs annually. The number of 12- to 17-year olds abusing controlled prescription drugs increased an alarming 212 percent between 1992 and 2003. For many youths, substance abuse precedes academic and health problems including lower grades, higher truancy, drop out decisions, delayed or damaged physical, cognitive, and emotional development, or a variety of other costly consequences. For thirty years the Narconon program has worked with schools and community groups providing single educational modules aimed at supplementing existing classroom-based prevention activities. In 2004, Narconon International developed a multimodule, universal prevention curriculum for high school ages based on drug abuse etiology, program quality management data, prevention theory and best practices. We review the curriculum and its rationale and test its ability to change drug use behavior, perceptions of risk/ benefits, and general knowledge. Methods: After informed parental consent, approximately 1000 Oklahoma and Hawai'i high school students completed a modified Center for Substance Abuse Prevention (CSAP) Participant Outcome Measures for Discretionary Programs survey at three testing points: baseline, one month later, and six month follow-up. Schools assigned to experimental conditions scheduled the Narconon curriculum between the baseline and one-month follow-up test; schools in control conditions received drug education after the six-month follow-up. Student responses were analyzed controlling for baseline differences using analysis of covariance. Results: At six month follow-up, youths who received the Narconon drug education curriculum showed reduced drug use compared with controls across all drug categories tested. The strongest effects were seen in all tobacco products and cigarette frequency followed by marijuana. There were also significant reductions measured for alcohol and amphetamines. The program also produced changes in knowledge, attitudes and perception of risk. Conclusion: The eight-module Narconon curriculum has thorough grounding in substance abuse etiology and prevention theory. Incorporating several historically successful prevention strategies this curriculum reduced drug use among youths. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Pankratz, M. M., Jackson-Newsom, J. et al. (2006). "Implementation fidelity in a teacher-led alcohol use prevention curriculum." Journal of Drug Education **36**(4): 317-333.

There is now ample evidence that teachers tend to make substantial modifications to both the prescribed content and methods of the curricula they administer, and that such modifications are likely to attenuate curricula effects. We examine the fidelity with which teachers implement "Protecting You, Protecting Me," an underage alcohol use prevention curriculum. Findings suggest that while teachers attempted to implement most sections of a lesson, the lessons taught

were consistently--and often extensively--adapted. We conclude that since teachers are likely to continue to modify lessons, curriculum developers and trainers should enhance their understanding of how prevention curricula are taught under real world conditions, help teachers to reinforce key curriculum concepts, and consider modifying those curricular sections that teachers are adapting with greatest frequency. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Pasch, K. E., Perry, C.L. et al. (2009). "Sixth grade students who use alcohol: Do we need primary prevention programs for "Tweens"? Health Education & Behavior **36**(4): 673-695.

Young adolescent alcohol users drink at higher rates than their peers throughout adolescence and appear to be less amenable to intervention. This study compares those who reported alcohol use in the past year to those who reported no use in a multiethnic, urban sample of sixth graders in 61 schools in Chicago in 2002 (N = 4,150). Demographic, behavioral, intrapersonal, and socioenvironmental factors were identified based on behavioral theories and potential mediators of the Project Northland Chicago intervention. Single and multiple regression models were created for users and nonusers to determine associations between these factors and alcohol use behavior and intentions. The multiple regression models explained 35% and 56% of the variance in alcohol use behavior and intentions between students for nonusers and users, respectively. Results suggest that primary prevention programs for alcohol use should occur prior to sixth grade, particularly for the substantial group at high risk for early use. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Porath-Waller, A. J., Beasley, E. et al. (2010). "A meta-analytic review of school-based prevention for cannabis use." Health Education & Behavior **37**(5): 709-723.

This investigation used meta-analytic techniques to evaluate the effectiveness of school-based prevention programming in reducing cannabis use among youth aged 12 to 19. It summarized the results from 15 studies published in peer-reviewed journals since 1999 and identified features that influenced program effectiveness. The results from the set of 15 studies indicated that these school-based programs had a positive impact on reducing students' cannabis use ($d = 0.58$, CI: 0.55, 0.62) compared to control conditions. Findings revealed that programs incorporating elements of several prevention models were significantly more effective than were those based on only a social influence model. Programs that were longer in duration (15 or more sessions) and facilitated by individuals other than teachers in an interactive manner also yielded stronger effects. The results also suggested that programs targeting high school students were more effective than were those aimed at middle-school students. Implications for school-based prevention programming are discussed. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Ringwalt, C., Hanley, S. et al. (2008). "The prevalence of effective substance use prevention curricula in the nation's high schools." The Journal of Primary Prevention **29**(6): 479-488.

Despite a substantial proportion of high school students who initiate substance use following middle school, the implementation of universal evidence-based prevention curricula appears to be scant. We report data collected in 2005 from 1392 school district-based drug prevention coordinators, from a national, representative study of school-based substance use prevention practices. Altogether, 10.3% of districts that included high school grades reported administering one of six such curricula that were then rated as effective by the Substance Abuse and Mental Health Services Administration's National Registry of Effective Programs and Practices or Blueprints for Violence Prevention, and 5.7% reported that they used one of these curricula the most. Only 56.5% of the nation's districts with high school grades administered any substance use prevention programming in at least one of their constituent high schools. Editors' Strategic Implications: The authors provide a powerful reminder that evidence-based prevention is not common in American high schools, in spite of federal mandates and the increasing availability of strong prevention programs. This should challenge researchers and government officials to improve dissemination and school officials to utilize evaluated programs. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Ringwalt, C., Hecht, M.L. et al. (2010). "Drug prevention in elementary schools: An Introduction to the special issue." *Journal of Drug Education* **40**(1): 1-9.

This special issue of the *Journal of Drug Education* addresses several variations on a theme, namely: what is the state of drug prevention programming in our nation's elementary schools? There is now abundant evidence to suggest that pre-adolescents, or "tweens" as they have been called (Pasch, Perry, Stigler, & Komro, 2008), are already beginning to experiment with alcohol and other substances by the time they are 12 or 13. This issue has reported three new evaluation studies (Elek et al.; Hansen et al.; Vincus et al.) as well as two reviews of elementary interventions nationally (Hanley et al.; Hopfer et al.). Clearly, this set of articles does not present a uniformly positive view of the status of elementary prevention. However, recent findings from an evaluation of Positive Action (Beets et al., 2009) suggest that socio-emotional approaches that focus on students' character may yield more promising effects with this younger age group. The issue concludes with commentary that summarizes the various issues presented in these articles and provides an agenda for the future. (PsycINFO Database Record (c) 2010 APA, all rights reserved)

Ringwalt, C., Pankratz, M. et al. (2009). "The effects of students' curriculum engagement, attitudes toward their teachers, and perceptions of their teachers' skills on school-based prevention curriculum outcomes." *Journal of Drug Education* **39**(3): 223-237.

We examined the association between changes in the substances and mediating variables targeted by the All Stars drug prevention curriculum, and students' engagement in and enjoyment of the curriculum, their attitudes toward their teachers, and their perceptions of their teachers' skills. Forty-eight school staff administered at least one All Stars class, for up to three consecutive years, to their seventh grade students in 107 classes in a large Midwestern school district. A sample of 2428 students completed a linked pretest and post-test, for a response rate of 91%. We found that students' engagement in and enjoyment of the curriculum, their attitudes toward their teachers, and their perceptions of their teachers' skill were all associated with positive changes in the curriculum's five mediators, but not with changes in students' substance use per se. Study findings suggest the importance of these three attributes to the achievement of the objectives of prevention curricula. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Ringwalt, C., Vincus, A.A. et al. (2011). "The prevalence of evidence-based drug use prevention curricula in U.S. middle schools in 2008." *Prevention Science* **12**(1): 63-69.

The No Child Left Behind Act mandates the implementation of evidence-based drug prevention curricula in the nation's schools. The purpose of this paper is to estimate changes in the prevalence of such curricula from 2005 to 2008. We surveyed school staff in a nationally representative sample of schools with middle school grades. Using a web-based approach to data collection that we supplemented by telephone calls, we secured data from 1892 schools for a response rate of 78.2%. We estimate that the prevalence of evidence-based drug prevention curricula rose from 42.6% in 2005 to 46.9% in 2008, and that the prevalence of schools that used these curricula most frequently increased from 22.7% to 25.9% over this period. In addition, the proportion of schools using locally developed curricula also rose, from 17.6% to 28.1%. This study suggests the success of efforts by the Office of Safe and Drug-Free Schools to increase the prevalence of evidence-based curricula, as well as the need to continue to track the prevalence of these curricula in response to any reductions in the Office's fiscal support for evidence-based drug prevention curricula in the nation's schools. (PsycINFO Database Record (c) 2011 APA, all rights reserved) (journal abstract)

Ringwalt, C. L., Pankratz, M.M. et al. (2009). "The potential of coaching as a strategy to improve the effectiveness of school-based substance use prevention curricula." *Health Education & Behavior* **36**(4): 696-710.

Research-based substance use prevention curricula typically yield small effects when implemented by school teachers under real-world conditions. Using a randomized controlled trial, the authors examined whether expert coaching improves the effectiveness of the All Stars prevention curriculum. Although a positive effect on students' cigarette use was noted, this finding

may be attributed to marked baseline differences on this variable across the intervention and control groups. No effects were found on students' alcohol or marijuana use or on any of several variables thought to mediate curriculum effects. The effects of coaching on teachers may not become evident until future years, when they have moved beyond an initial mechanical delivery of the curriculum. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Rohrbach, L. A., Sun, P. et al. (2010). "One-year follow-up evaluation of the Project Towards No Drug Abuse (TND) dissemination trial." Preventive Medicine: An International Journal Devoted to Practice and Theory **51**(3-4): 313-319.

Objective: The aims of this trial, conducted 2004-2008, were to examine (1) the effectiveness of Project Towards No Drug Abuse (TND) at the one-year follow-up when implemented on a large scale; and (2) the relative effectiveness of two training approaches for program implementers. Method: A total of 65 high schools from 14 school districts across the United States were randomized to one of three conditions: regular workshop training, comprehensive implementation support, or standard care control. Physical education and health teachers delivered the program to students (n = 2538). Program effectiveness was assessed with dichotomous measures of 30-day substance use at baseline and one-year follow-up. Results: When the program conditions were considered in aggregate and compared to controls, the program showed a marginally significant effect in lowering marijuana use from baseline to the one-year follow-up. Significant program effects on hard drug use were achieved for baseline non-users only. There were no differences in the effects of the two program conditions. Conclusion: Positive outcomes may be achieved by trained teachers when they implement Project TND in real-world high school environments; however, program effects are likely to be weaker than those achieved in efficacy trials. Training workshops may be adequate to build capacity for successful program implementation. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Scull, T. M., Kupersmidt, J.B. et al. (2010). "Adolescents' media-related cognitions and substance use in the context of parental and peer influences." Journal of Youth and Adolescence **39**(9): 981-998.

Two cross-sectional studies investigated media influences on adolescents' substance use and intentions to use substances in the context of exposure to parental and peer risk and protective factors. A total of 729 middle school students (n = 351, 59% female in Study 1; n = 378, 43% female in Study 2) completed self-report questionnaires. The sample in Study 1 was primarily African-American (52%) and the sample in Study 2 was primarily Caucasian (63%). Across the two studies, blocks of media-related cognitions made unique contributions to the prediction of adolescents' current substance use and intentions to use substances in the future above and beyond self-reported peer and parental influences. Specifically, identification with and perceived similarity to media messages were positively associated with adolescents' current substance use and intentions to use substances in the future, and critical thinking about media messages and media message deconstruction skills were negatively associated with adolescents' intention to use substances in the future. Further, peer influence variables (e.g., peer pressure, social norms, peer substance use) acted as risk factors, and for the most part, parental influence variables (e.g., parental pressure to not use, perceived parental reaction) acted as protective factors. These findings highlight the importance of developing an increased understanding of the role of media messages and media literacy education in the prevention of substance use behaviors in adolescence. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Sobeck, J. L., Abbey, A. et al. (2006). "Lessons learned from implementing school-based substance abuse prevention curriculums." Children & Schools **28**(2): 77-85.

This article reports on the lessons learned from a five-year, evidence-based substance abuse prevention initiative conducted in three school districts. Traditional outcome measures yielded no significant program effects, despite the use of an evidence-based curriculum. The failure to find significant statistical results is discussed in terms of four issues that are crucial for successful program implementation: (1) initial selection of an appropriate program, (2) adequate stakeholder involvement and school readiness, (3) attention to program fidelity, and (4) evaluation planning.

Based on the literature and the authors' experience, practice implications are offered to maximize the effectiveness of school-based prevention programs. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Stead, M., Stradling, R. et al. (2010). "Bridging the gap between evidence and practice: A multi-perspective examination of real-world drug education." Drugs: Education, Prevention & Policy **17**(1): 1-20. Aims: The study examined normative school drug-education practice in Scotland and the extent to which it reflected the evidence base for effective drug education. Methods: Current guidance in Scotland was compared with systematic review evidence on drug-education effectiveness; a survey was mailed to primary, secondary and special schools (928 questionnaires returned); and 100 drug-education lessons were systematically observed across 40 schools. Findings: Nearly all schools provided drug education but modes of delivery and learning approaches did not always reflect the evidence base. There was a strong reliance on information provision and more limited use of social influences, resistance and normative approaches. Teaching was reasonably interactive, particularly with teachers who had been trained. Although drug education was provided across all school years, there was limited linkage and some duplication of content for different age groups. The rationale for resource use was not always clear, and some resources were inappropriate for pupils. Conclusions: Recommendations for closing the gap between evidence and practice include: guidance that emphasizes more strongly the weight of evidence behind recommendations; training in effective approaches; greater continuity and integration of drug education across the whole curriculum; a review of resources; and better guidance on using external visitors. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Steenrod, S. A. and M. van Bael (2010). "Substance abuse education: Perceived competence of field instructors on substance abuse." Journal of Social Work Practice in the Addictions **10**(4): 363-376. Substance use is an undeniable problem in the United States. Field instructors are called on to supervise social work students on how to help address substance abuse issues. This exploratory study seeks to understand the perceived competence field instructors have in their ability to supervise students on the knowledge, skills, and values needed to work with individuals with substance abuse problems. Results indicate that a greater proportion of field instructors feel competent in their ability to supervise students around value-based substance abuse issues, rather than knowledge- or skill-based issues. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Stephens, P. C., Sloboda, Z. et al. (2009). "Is the receptivity of substance abuse prevention programming affected by students' perceptions of the instructor?" Health Education & Behavior **36**(4): 724-745. Drawing on the elaboration likelihood model of persuasive communication, the authors examine the impact of the perceptions of the instructor or source on students' receptivity to a new substance abuse prevention curriculum. Using survey data from a cohort of students participating in the Adolescent Substance Abuse Prevention Study, the authors use structural equation modeling to determine the effects of the perceptions students have of their program instructor on measures of the targeted program mediators and the use of cigarettes, alcohol, and marijuana. They test these instructor effects after each component of a two-part curriculum is administered (during the seventh and ninth grades). They find that the perceptions of the instructor significantly affect refusal, communication and decision-making skills, normative beliefs, perceived consequences of use, and substance use. The authors discuss the implications of these findings for school-based prevention programming and indications for further research. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Twombly, E. C., Holtz, K.D. et al. (2008). "Multimedia science education on drugs of abuse: A preliminary evaluation of effectiveness for adolescents." Journal of Alcohol and Drug Education **52**(1): 8-18. Adolescent substance abuse is a significant public health problem in the United States. Physical consequences of adolescent drug use include short and long-term negative effects on the brain and body, including disease, impaired judgment, addiction, and even death. In particular, increasing knowledge about the negative effects of drugs may effectively delay the onset of use

and prevent negative consequences of use among youth. Despite the benefits of school-based prevention, the amount of this instruction that children receive declined significantly in recent years. The scientific concepts related to drug use, including information on brain function and neurotransmission and how drugs change these processes, are complex. The curriculum was predicated on the Theory of Reasoned Action (TRA), which posits that exposure to new persuasive information causes progressive changes in knowledge, attitudes, and ultimately behavior. The data reveal several key findings about the impact of the multimedia curriculum on knowledge and attitudes in the target population. Overall, the results suggest that the multimedia curriculum under evaluation is relatively effective at increasing knowledge about alcohol and drugs of abuse. The results of the evaluation point to the need for research on other innovative approaches that decrease barriers to delivery of critical health information to students in the current educational climate. (PsycINFO Database Record (c) 2010 APA, all rights reserved)

Valente, T. W., Okamoto, J. et al. (2007). "Differences in perceived implementation of a standard versus peer-led interactive substance abuse prevention program." *American Journal of Health Behavior* **31**(3): 297-311.

Objective: To assess perceived implementation of 2 substance-abuse prevention programs: a standard one and a peer-led interactive one. Methods: Data from 16 health educators were collected after 504 classroom sessions, 63 of which were observed by 24 monitors. Results: In the interactive program, health educators (HEs) followed the curriculum less closely, reported less favorable classroom processes and less off-task talking than in the standard one. Conclusions: These data indicate that an interactive substance-abuse prevention program does not necessarily entail more off-task discussion but also does not necessarily guarantee more favorable program implementation. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Van Der Kreeft, P., Wiborg, G. et al. (2009). "'unplugged': A new European school programme against substance abuse." *Drugs: Education, Prevention & Policy* **16**(2): 167-181.

This paper presents the rationale, development and application of "Unplugged" a new school programme for the prevention of substance abuse, which is based on the comprehensive social influence approach (CSI). The programme was developed, implemented and evaluated by a cross-disciplinary group of experts in the frame of a multi-centre study in seven European countries. The basic curriculum consists of 12 units, which are delivered by class teachers to a target population of 12-14 year-old students. Additional programme components were workshops for the students' parents and debriefing sessions led by class peers. The programme's application was monitored by means of structured report forms. This process monitoring allowed for the analysis of problems in implementation, as well as of participatory aspects. "Unplugged" is the first comprehensive social influence school curriculum in Europe of which the efficacy has been evaluated in a field trial, and it also constitutes an example of a theory- and evidence-based programme against youths' substance use. This report can provide public health and school decision makers with tools to make an informed choice on these kinds of programmes and to survey their application. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

White, S., Park, Y.S. et al. (2010). "Impact of curriculum infusion on college students' drinking behaviors." *Journal of American College Health* **58**(6): 515-522.

Objective: A posttest-only experimental design was used to examine the effectiveness of curriculum infusion (CI) in reducing alcohol consumption and associated negative consequences among college students. Methods: Faculty teaching 2 identical courses during the same quarter were recruited; both classes were randomly assigned to either a treatment or control group, and alcohol information was infused into the treatment classes in addition to the regular curriculum. Participants: A diverse group of 343 undergraduate students participated, with 179 students in the treatment classes and 164 in the control classes. Results: No significant difference was found in alcohol consumption between the 2 groups. Students in the treatment classes reported significantly less negative consequences related to drinking than their counterparts. The

effectiveness of CI was not related to subject matter and was equally effective with all students. Conclusion: CI was effective in reducing negative drinking consequences in college students despite not affecting drinking behaviors. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Will, K. E. and Sabo, C.S. (2010). "Reinforcing Alcohol Prevention (RAP) Program: A secondary school curriculum to combat underage drinking and impaired driving." Journal of Alcohol and Drug Education **54**(1): 14-36.

The Reinforcing Alcohol Prevention (RAP) Program is an alcohol prevention curriculum developed in partnership with secondary schools to serve their need for a brief, evidence-based, and straightforward program that aligned with state learning objectives. Program components included an educational lesson, video, and interactive activities delivered during a 90-minute period. RAP Program modules were delivered to 1,720 8th, 9th, and 10th graders at four schools during health courses. Dependent T-tests on a pre-post alcohol-related knowledge survey administered to a subset of classes (N = 668) indicated that students' knowledge and awareness of alcohol-related risks and consequences increased significantly from pretest (M = 84.96, SD = 8.87) to posttest (M = 97.25, SD = 12.39). The program was well received and showed statistically significant improvements in students' knowledge and awareness of alcohol's harmful effects. (PsycINFO Database Record (c) 2010 APA, all rights reserved) (journal abstract)

Part Three: Annotated Bibliography of Reports

Roberts, G. (September 2006). **Literature Review: Best Practices in School-Based Drug Education for Grades 7-9.** Nova Scotia Department of Health Promotion and Protection

The purpose of this report was to complete a review of the school health and drug education literature (published and grey) from 1995 to the present, and to identify best practices for junior high school drug education in order to inform curriculum supplement development and classroom teacher practice. The review has served as one of four primary references (along with departmental curriculum guidelines, student substance use survey data, and educator/student consultations) in the development of the Nova Scotia junior high school drug education curriculum supplement, entitled *A Question of Influence*.

Pages 25 & 26 outline a summary of best practices in substance use prevention education for youth in grades 7-9.

Canadian Centre on Substance Abuse (2010). **Building on Our Strengths: Canadian Standards for School-Based Youth Substance Abuse Prevention.**

The Canadian Standards for School-based Youth Substance Abuse Prevention are part of *A Drug Prevention Strategy for Canada's Youth*, a five-year Strategy launched by the Canadian Centre on Substance Abuse (CCSA) in 2007 aimed at reducing drug use among Canadian youth aged 10–24. The Strategy is a response to a call to action towards reducing substance abuse among Canada's children and youth—a national priority identified by the *National Framework for Action to Reduce the Harms Associated with Alcohol and Other Drugs and Substances in Canada* (2005). The development of *A Drug Prevention Strategy for Canada's Youth* was informed by promising research that indicates that prevention efforts are most effective when multi-faceted (i.e., when media messages are used in tandem with prevention programs involving schools, communities and families) and sustained over time. As a result, the Strategy uses three complementary approaches to reinforce and multiply each approach's impact while delivering specific results:

1. Forming and maintaining sustainable Partnerships.(e.g., National Advisory Group on Youth Substance Abuse Prevention);
2. Developing Canadian Prevention Standards; and
3. Building and sustaining a Media/Youth Consortium (e.g., www.Xperiment.ca, URL-TV).

The School-based Standards are one of several sets of standards being developed with the aim of strengthening the quality of youth-focused substance abuse prevention programs in Canada. Alongside other sectors of the community, schools share an opportunity and responsibility to contribute to the prevention of substance abuse among youth. The Standards have been prepared to support the prevention efforts of all those considering or currently engaged in school-based prevention work. They are addressed particularly to prevention resource persons in their capacity as members or resources for school teams. The Standards aim to support these workers by providing them with:

- a benchmark of optimal performance for school teams;
- support and guidance to pursue continuous improvements; and
- practical resources and examples to support change.

Specific to classroom curriculum, pgs 41-45 outlines evidence-informed and evidence-based practices.

Meyer, L & Cahill, H. (2004). **Principles for School Drug Education**. Australian Government, Department of Education, Science, and Training.

This document presents a revised set of principles for school drug education. The principles for drug education in schools comprise an evolving framework that has proved useful over a number of decades in guiding the development of effective drug education. The first edition of *Principles for Drug Education in Schools* (Ballard et al. 1994) has provided a strong foundation for school drug education within Australia. *Principles for School Drug Education (2004)* has been prepared in response to emerging needs and outcomes of research in drug education and curriculum practice. Like the 1994 document, the 2004 Principles will be updated in response to future developments and professional feedback.

The principles inform all aspects of substance use prevention education.

New Zealand Ministry of Youth Development (2004). **Strengthening Drug Education in School Communities: BEST PRACTICE HANDBOOK FOR DESIGN, DELIVERY AND EVALUATION YEARS 7-13**

This handbook for school-based drug education was developed from the literature review findings. The 16 best practice principles are intended to help schools provide drug education that is effective in improving young people's drug-related knowledge, skills and safe attitudes. Strengthening Drug Education in School Communities is for people who:

- plan, develop, deliver and evaluate school-based drug education
- use or fund school-based drug education from external providers.

The purposes of the handbook are:

- to improve the effectiveness of the curriculum-based approach to drug education
- to complement Drug Education: A Guide for Principals and Boards of Trustees (drug education guidelines) published by the Ministry of Education
- to encourage best practice principles in the design, delivery and evaluation of school-based drug education
- to provide guidelines on how to plan and evaluate drug education over time to ensure it is consistent with best practice
- to provide schools with a checklist to guide their decisions about using drug education offered by external providers.

The principles inform all aspects of substance use prevention education.

