Information Brief

Comprehensive Science-Based Prevention

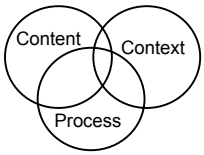
Whether the focus is academic achievement or the healthy development of our children and youth, the question that confronts schools and child-serving community organizations is "What works?" Many research fields, including health, education, psychology, and juvenile justice have sought answers. The answer that emerged from their efforts was comprehensive programming using a wide range of science-based strategies. Educators, confronted with a myriad of decisions from how many new school buses to purchase, to whether or not they will be able to find a teacher for eighth grade math, to the challenges that their children are completely safe at school, are overwhelmed with the charge to develop and implement effective programs. What is comprehensive? What is science-based? How can we prevent violence among our young people?

INTRODUCTION

Prevention of youth violence begins with positive youth development and the implementation of programs and services that reduce the incidence of problem behaviors. Only on those rare occasions when these efforts fail will it be necessary for schools to move into a crisis management mode, implementing procedures for which they have planned adequately and been properly trained.

For years, schools have invested human and financial resources to implement strategies that they believed would reduce substance abuse, violence, and disruptive behaviors and that would contribute to safe and disciplined learning environments. Despite good intentions, there was little evidence that the strategies implemented were producing desired results. At the same time, prevention researchers began to identify strategies that would have desired effects.

We now know that there are practices that have been proven effective in ameliorating problem behaviors. They are both comprehensive and science/research-based. Comprehensive approaches use a continuous improvement *process* of planning and implementation to address the *content* of violence prevention and the *context* in which the plan is implemented. Attention to context, process, and content occurs simultaneously.



PROCESS: THE PRINCIPLES OF EFFECTIVENESS

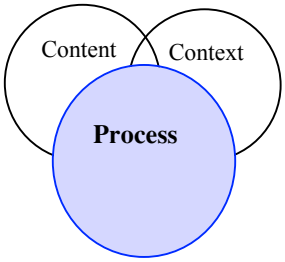
School personnel confront the daunting task of deciding what programming is most likely to meet the needs of students in their district. The task begins with using a scientific process for program planning and implementation that is likely to lead to success. In 1998, the U.S. Department of Education put forth the Principles of Effectiveness that establish a process for science-based practice. These principles are:

Principle 1: Base programs on a thorough assessment of objective data about the problems they address in the schools and communities they serve.

Principle 2: Establish a set of *measurable goals and objectives* to meet the identified needs and determine the activities to achieve them.

Principle 3: Design and implement activities based on research or evaluation that the strategies used are effective in addressing the goals.

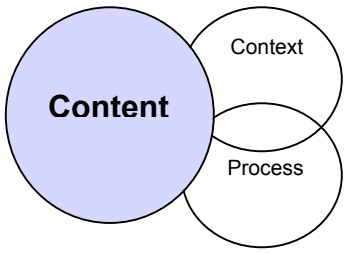
Principle 4: Periodically *assess progress* toward achieving goals and objectives. Use evaluation results to refine, improve, and strengthen the program, or to refine its goals and objectives as appropriate.



CONTENT: COMPONENTS OF A COMPREHENSIVE PROGRAM

Comprehensive programming is a multi-faceted approach to address risk and protective factors for violent and disruptive behavior in order to promote the healthy development of our children and youth in multiple domains (schools, peers, families, community and the environment).

The content of prevention is the information and knowledge about root causes and consequences for a range of problem behaviors, as well as the strategies to prevent them. Research-based frameworks related to asset development or risk and protective factors identify those elements that contribute to the reduction of problem behaviors. They can guide the selection of strategies that improve program effectiveness.



Researchers have identified an array of strategies that are most likely to produce desired results. A truly comprehensive approach incorporates activities that implement all the strategies listed below for all children from early childhood through grade 12.

Prevention strategies directly affecting youth

- *Information dissemination* increases knowledge and changes attitudes through activities such as classroom discussions, media campaigns, and special events. This strategy also includes the distribution of information to students and employees about community resources.
- *Environmental approaches* address those factors that are external to individuals but nevertheless affect their behavior. Although they directly target factors to create respectful, orderly environments conducive to learning, these approaches may include activities designed to develop a sense of individual responsibility and respect for the rights of others and to resolve conflicts without violence. Environmental strategies often incorporate activities that influence social norms and expectations, as well as policies and their implementation. School-wide strategies such as school-wide discipline systems have proven to be among the most effective violence prevention strategies (Gottfredson, 2001).
- *Prevention education* is developmentally-based instruction for all children and youth from early childhood through grade 12 that:
  - teaches important skills, such as social, conflict management, and problem-solving skills;
  - promotes a sense of individual responsibility and provides information and effective techniques for resisting peer pressure
  - addresses the legal, personal, social and health consequences of violent and disruptive behavior and the use of illegal drugs.
- *Problem identification and referral processes* recognize individuals exhibiting problem behaviors and refer them for assessment and intervention.
- *Alternatives* offer opportunities for participation in constructive, developmentally appropriate activities that build assets in environments that protect youth from situations that put them at risk.

Prevention strategies not directly affecting youth

- *Parent and community involvement activities* promote active engagement of parents in their child's education and coordination with community groups and agencies, including their participation in the district's needs assessment, goals, and program implementation;
- *Professional development* includes training for school staff in the strategies to be delivered directly to youth.

SCIENCE/RESEARCH-BASED AND THEORY DRIVEN

For years schools have operated programs that sounded good and that they believed to be effective, yet when desired outcomes were examined, the results were disappointing. The prevalence of problem behaviors among young people had not improved. In fact, in many cases it had worsened. Meanwhile, the field of prevention science has learned a great deal about what works. Now schools and communities are called upon to use scientifically defensible prevention programs. How can a school know if a program is science-based?

> ***"These changes [to science-based practices] can be difficult to make if current prevention programs are popular with staff, participants, or funding sources."***
> *- Tom Griffin, 1999*

Tom Griffin, evaluator of the Central Center for the Application of Prevention Technologies (1999), describes science-based programs as, "approaches that have been developed and evaluated using scientific processes. These programs are grounded in a clear theoretical foundation and have been carefully implemented and evaluated. Regardless of differences in program focus, research design, or evaluation methodology, it is important that all prevention efforts reflect the scientific process and be designed and implemented in ways that are likely to be effective."

Not all evidence of program effectiveness is derived from equally rigorous evaluation procedures. Five levels of evidence can serve as guidelines to assist schools in their selection of potentially effective programs:

Level One	Anecdotal evidence
Level Two	Appearance in a non-refereed journal or publication
Level Three	Peer review of program implementation and evaluation
Level Four	Meta analysis showing effectiveness across a broad array of program strategies
Level Five	Replications appearing in a variety of refereed professional journals, and strategy can be replicated exactly.

THE EXPERT PANEL PROCESS: WHAT WORKS

> ***"Our intention is to demonstrate a process that will help educators make informed decisions about their prevention efforts and to prescribe which programs or strategies they should use."***
> *- Bill Modzeleski*

In order to identify the most effective prevention programs, the U.S. Department of Education convened a 15-member team of educators, researchers, evaluators, and program developers, as well as representatives from local and state education agencies, businesses, institutions of higher education, and the legal and medical

communities. The criteria used by the panel to review and evaluate prevention programs can guide schools' selection of potentially effective programs for their own prevention efforts.

- **Research:** The program reports findings on at least one methodologically sound evaluation that demonstrates effect on substance use, violent behavior, conduct problems, or one or more scientifically established risk and protective factors that are predictors of these behaviors;
- **Goals:** The program's goals with respect to changing behavior and/or risk and protective factors are clear and appropriate for the intended population and setting;
- **Rationale:** The program clearly states the underlying rationale and the content and processes are clearly aligned with its goals;
- **Fit to target population:** The program's content takes into consideration the characteristics of the intended population, setting, and needs implied by these characteristics;
- **Engaging quality:** The program implementation process effectively engages the intended population;
- **Alignment with mission:** The program is integrated into the schools' educational mission;
- **Replication potential:** The program provides necessary information and guidance for replication in other appropriate settings.

The expert panel (for a listing of the panel, see http://www.ed.gov/offices/OERI/ORAD/KAD/expert_panel/2001exemplary_sddfs.html) identified nine exemplary and 33 promising programs that promote healthy, safe, disciplined, and drug-free schools.

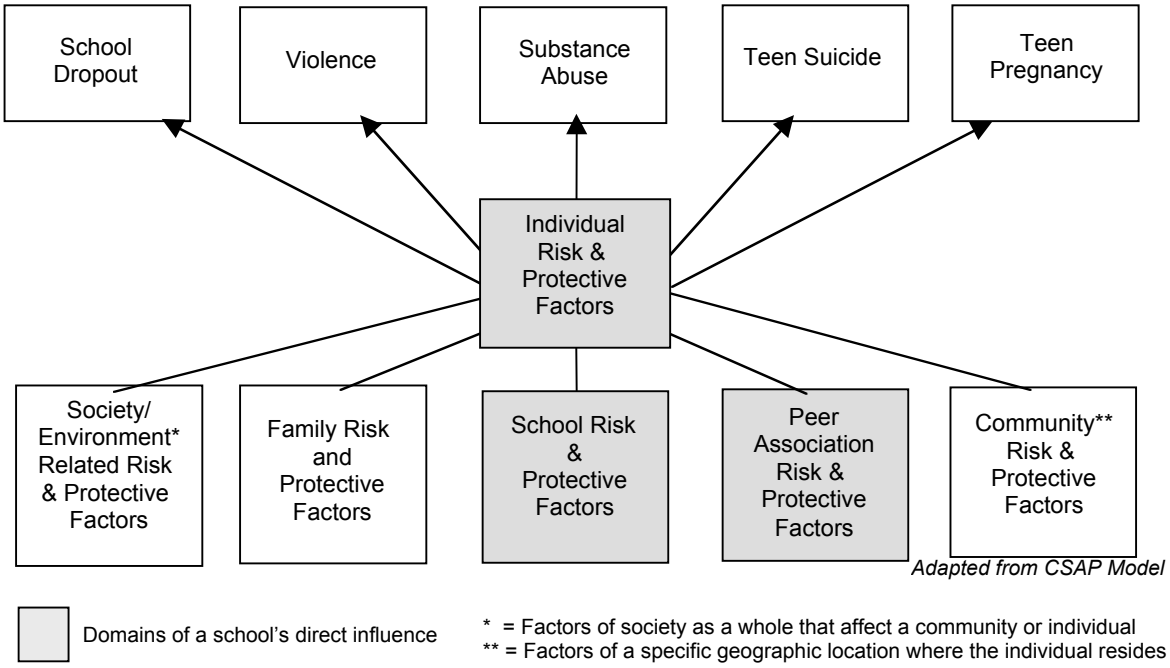
Context For A Comprehensive Program

The context is the system that uses prevention programming. This context begins with a school district and the principles (i.e., vision, mission, and beliefs) that guide its policies and decision-making. A district sets the direction and the tone for the work in its buildings. The Comprehensive School Improvement Plan (CSIP) serves as the governing document. District policies and practices frame the work at the building level. Comprehensive programming includes work at the building, classroom, and individual student levels. The success of any program may be largely dependent upon the readiness of the system to support the effort in leadership, attitude, and resources.

Summary

With so many demands placed on school administrators to provide programs that meet the developmental needs of students, we should welcome the trend away from fragmented and faddish programs. Now is the time to assess the needs of the district's students and to establish measurable goals to meet those needs. This provides the opportunity to: examine all of the district's prevention programs, pulling together those with the prospect of positively affecting the goal; eliminate redundant and ineffective strategies, and adopt proven effective programs that have great promise of meeting the identified needs; and finally, monitor the effectiveness of the comprehensive program put in place using scientifically-based evaluation procedures.

Web of Influence



PROGRAMMING TO ADDRESS RESEARCH-BASED RISK AND PROTECTIVE FACTORS THAT SCHOOLS CAN INFLUENCE DIRECTLY

FACTOR	SAMPLE STRATEGIES	POSSIBLE ACTIVITIES
DOMAIN: INDIVIDUAL (Attitudes, knowledge, skills, problem behaviors, biological & psychological dispositions)		
• Attachment & commitment to school • Social and emotional competency • Resilient temperament • Successful academic performance • Perceived norms for violence & drug use • Belief in societal rules • Religiosity • Negative attitudes toward delinquency • Negative attitudes toward drug use • Rebelliousness • Early, persistent antisocial/aggressive behavior • Early initiation of delinquency • Early initiation of drug use • Impulsivity/low self-control/sensation seeking • Expectations of drug effects • Affective disorders (e.g., depression, anxiety) • Physical/sexual abuse	**Education & information strategies** • Knowledge on risks associated with violence and substance abuse • Information on positive healthy behaviors • Curricular information on violence and substance abuse • Social competence • Positive relationships with adults **Problem identification & referral processes** • Individual behavioral interventions • Counseling/therapeutic interventions **Alternatives** • Recreational, enrichment, and leisure activities • Educational enhancement activities –e.g., tutoring and study skills	**Education & information strategies** • ***Prevention curricula*** – classroom and school-wide violence prevention, conflict resolution, job skills, conflict resolution, job skills, social competency instruction, leadership, and decision-making skills **Problem identification & referral processes** • Problem-solving teams, e.g. BATs, SATs • Functional behavioral assessment and behavior intervention planning • Individual and group counseling for stress reduction • Mentoring **Alternatives** • After school programs
DOMAIN: SCHOOLS (Bonding, climate, policies, performance)		
• Clarity of norms/rules about behavior • Consistent enforcement of rules for behavior • Availability of drugs • Availability of guns	**Environmental strategies** • Creation of respectful, orderly environment, conducive to learning through communication of norms or expectations for behavior. • Bonding to prosocial culture	**Environmental strategies** • Policies, rules, regulations or laws about behavior/ discipline • Pro-social, instructional school-wide discipline programs that include high expectations and consistent enforcement of rules • Classroom management
DOMAIN: PEERS (Norms, activities, bonding)		
• Attachment to prosocial others • Peer rejection in elementary school • Exposure to association with delinquent peers • Exposure to association with drug-using peers	**Education & information strategies** • Peer resistance education and skill building **Environmental strategies** • Peer reinforcement of prosocial norms	**Environmental strategies** • Youth involvement in addressing student conduct • Peer group strategies **Alternatives** • After school programs • Classroom & peer support groups
DOMAIN: FAMILIES (Function, management, bonding)		
• Family attitudes and skills toward violence • Family management practices • Attachment/bonding to family	**Parent involvement activities** • Family involvement in school • Family/parenting skill training • Services to improve family management practices	**Parent involvement activities** • Parent-child communication programs • Parent-school communication programs
DOMAIN: COMMUNITY (Bonding, norms, resources, awareness/mobilization)		
• Norms about violence & drugs • Linkages among community member	**Community involvement activities** • Interaction between school and community groups within the school	**Community involvement activities** • Joint planning • Shared programming • Cross-agency training

LEARN MORE ABOUT IT:

- **Web sites:**
  - USDE Exemplary Programs – http://www.ed.gov/offices/OERI/ORAD/KAD/expert_panel/2001exemplary_sddfs.html
  - CSAP Model Programs - http://www.samsha.gov/centers/csap/modelprograms
- **In this Handbook:** See information briefs in this section.