



## A tribute to Nancy Tobler 1936–2000

Anyone who says of drug education, "It's no use talking at them" either is or should be quoting the work of the late Nancy Tobler. Until she scientifically established that interactivity was the key to effective preventive education, the appeal of telling them the awful facts, moral exhortation and stern lecture were hard to refute. She also showed that the pessimistic conclusion that education did not prevent drug use was a product of the conflation of two very different approaches. Lumped together, their impacts seemed meagre, but this was only because the worthless overshadowed the worthwhile.

Her unique contribution was to combine the insight of a teacher with sophisticated statistical methods applied to a staggeringly comprehensive dataset. The analysis hinged not on its technical expertise but on the insight which categorised approaches primarily by their method of delivery. The synergy of interpersonal content delivered by interpersonal teaching methods keyed into the reality that in the adolescent years, drug use is primarily a social behaviour. Such programmes had modest but worthwhile impacts. The remainder were in their own terms – the ability to prevent drug use – literally worthless.

There surfaces in the article we reprint here a parent's and a teacher's anger that so many schools persist with the worthless or attempt the impossible. Late in the day her message is being heard. Dominant among the non-interactive programmes she helped expose as preventive failures is DARE, a programme now being withdrawn from US schools.<sup>18,19</sup> Such withdrawal will be made more acceptable by Nancy Tobler's message that there are alternatives which work.

These are the achievements which will be remembered by all who teach children about drugs; her colleagues delivered a more personal tribute:

***Dr Nancy S. Tobler passed away on February 15, 2000 after being stricken while vacationing. Her pioneering work in the meta-analysis of substance abuse prevention programming earned her recognition throughout the world. Nan had been a middle school and high school teacher, a social worker, a psychotherapist, and a college professor. She also excelled at being a mother and wife. Her unique background enabled her to understand the issues young people face and to attempt to make a difference in their lives.***

# Prevention is a *two-way* process

*Nancy Tobler's achievement in integrating research on 120 school programmes established a secure foundation for identifying what works: key message, make it a dialogue, not a lecture. In this recently published article she gave an accessible and practice-oriented account of her findings.*



by Nancy Tobler

Prevention efforts have changed substantially as researchers developed models based on knowledge of human development and of children's and adolescents' drug use experiences. In the 1960s, the focus was on instilling fear of the consequences of drug use, in the 1970s, on providing accurate and complete information on drug use as well as on personal and social development. For example, affective education programmes aimed to help youth develop skills to enhance self-esteem, problem-solving, decision-making, and interpersonal communication.

A more recent approach incorporates features from these earlier models and also emphasises the relationships between psychosocial development and environmental influences. Resistance skills – how to say NO – are an important component of this approach, which strives to promote personal and social competence generally and with regard to situations such as the temptation to use alcohol and other drugs.

Research suggests that maximally effective prevention programmes would combine cognitive, affective, and skills development approaches and be comprehensive in the sense that they reach all students and involve the entire community including the school, youth, parents, and community agencies and organisations.<sup>1</sup> Unfortunately, most programmes do *not* adhere to these research-based standards. Despite a five-year statewide study showing that the *Here's Looking At You, Two* programme did not impact on drug use,<sup>2</sup> it was adopted in five US states.<sup>3</sup> *Project DARE* reaches 70% of US school districts but has been only been marginally effective in decreasing drug use.<sup>4</sup>

However, there are programmes which *do* change adolescent drug use. Just what sort of programmes these are was explored by our meta-analysis of findings from 120 different programmes.<sup>5</sup> (Meta-analysis is a scientifically rigorous method of pooling findings from many studies of the same or similar interventions to arrive at an overall estimate of their effectiveness.)

The meta-analysis covered evaluations of 120 school-based adolescent drug prevention programmes spanning grades 5–12, roughly ages 9–18. Studies entered in the analysis all had a control or comparison group against which programmes could be assessed, and all documented outcomes in the form of the pupils' own reports of their drug use. The evaluated programmes were examined for commonalities in content and delivery and divided into two main types:

- Non-interactive programmes, subdivided into knowledge-only, affective-only, or knowledge-plus-affective;
- Interactive programmes, incorporating pupil participation and aiming to increase interpersonal skills, subdivided into those focusing on social influences, comprehensive like skills, and others.

## Dimensions of effectiveness

Meta-analytic methods were used to compare the effectiveness of these different types. Our main finding was that the 75 interactive programmes were significantly more effective at reducing drug use than the 45 non-interactive programmes. This was equally the case with cigarettes, alcohol, marijuana, and illicit drugs generally, and in schools with predominantly minority populations. Effect size was used as a standardised measure of how much the feature programmes bettered their comparison or control condition. Overall, the interactive programmes had an effect size of 0.2, the non-interactive ones 0.02. Our general conclusion is supported by many other reviews.<sup>6,7,8,9,10</sup>

The panels *What works and What doesn't work* (➤ overleaf) summarise the features of successful and unsuccessful school-based adolescent drug prevention programmes.

**THANKS** We are grateful to Tobler Research Associates and to the Edwin Mellen Press for permission to publish this edited version of an article first published as: Tobler N.S. "School-based adolescent drug prevention: what works and what doesn't, what's next?" In: Gordon J.U., ed. *A systems change approach to substance abuse prevention*. Lampeter: The Edwin Mellen Press, 1997.



These largely reflect the differences we found between interactive and non-interactive programmes.

#### Interpersonal content

Though some incorporated intrapersonal elements such as goal setting and coping skills, all the successful interactive programmes focused primarily on *interpersonal* competence. Knowledge of pro-drug media influences and the long- and short-term consequences of drug use were combined with drug refusal and other interpersonal skills. Perceptions of the extent of drug use among pupils' peers were challenged by feedback from local school surveys. Drug refusal skills were practised to enable negotiation of drug offers so that the adolescent could refuse yet continue to feel secure in his/her peer group.

In contrast, the unsuccessful non-interactive programmes had an *intrapersonal* focus – on the individual's perceptions, beliefs and skills.<sup>11</sup> They reflected two different theoretical assumptions.

First, values-based approaches encouraged examination of one's personal beliefs, values, and decision-making patterns. Adolescents were encouraged to make a personal decision to abstain from drugs based on ethical or moral considerations. Content was directed at the individual pupil and their internal perceptions, not those of their peers. These approaches were particularly ineffective. Second were the DARE-type programmes, focused on strengthening personal competence and functioning to forestall involvement with drugs. Building self-esteem, decision-making and coping skills were included, along with public commitment not to use drugs. Though more effective than values programmes, these were still significantly less effective than interactive approaches.

Developmentally, the intrapersonal focus with its goal of increasing self-esteem may have greater potential in primary schools where students are in self-contained classrooms. Having a single teacher allows greater individual attention and recognition. In secondary schools a focus on self-esteem can be problematic as teachers can be involved with well over 100 adolescents in a day.

#### Interactive delivery

The non-interactive group process is familiar to all teachers. Lectures were used to deliver the content. Some programmes did combine didactic presentations with discussions and experiential activities. However, communication was mostly between teacher and student, not student to student.

Interactive programmes used a very different way of learning, providing cross-communication and opportunities for exchange of ideas. The interactions in-

cluded everyone and were both *participatory* and *between peers*. Structured small group activities were used to introduce the content and promote acquisition of drug refusal skills. By receiving feedback in a supportive atmosphere, the hope was that the young people would be able to use their new skills in a situation of higher stress, ie, a real world, drug-related situation.

During adolescence, establishing relationships with peers takes priority over those with adults. Groups offer support and define reality for adolescents and, in the case of drug prevention, furnish an excellent opportunity to challenge the almost universal tendency of adolescents to overestimate the extent of drug use among their peers. It is no surprise that interactive programmes based on peer-to-peer exchanges are more effective than non-interactive programmes which depend upon an ethical decision or personal change of values.

#### Bigger is not better

All programmes were much less effective when implemented on a large scale (over 400 pupils), though among the large programmes interactive ones were still significantly superior. There are several possible explanations. Ideally, everyone participates. Small groups afford greater opportunity for each pupil to practise and become comfortable and proficient in using new skills. Without extra leaders to facilitate small groups, each adolescent can potentially interact only a few times. If each pupil doesn't get their 'air time', an essential element is missing. In large-scale implementations, extra leaders are seldom provided.

Some teachers may not have implemented all programme elements equally, possibly uncomfortable with aspects such as role playing. As well as giving the necessary skills, training needs to convince teachers that this type of programme works.<sup>12</sup> Also, drug prevention may not differ from other educational goals whose achievement is negatively related to school size and the number of schools in a district.<sup>13</sup>

How did the programmes work?

Explaining the pathways that lead to behavioural change helps to strengthen the findings. As the perceived risk of using marijuana increases, use levels decrease.<sup>14</sup> Conversely, recent increases in marijuana use were preceded by decreases in perceived harm.<sup>15</sup> It follows that programmes able to change attitudes about drug use will be more effective. The interactive programmes did show significant positive changes for knowledge and attitudes as well as decreases in drug use. Non-interactive programmes did not show significant positive changes for attitudes or drug use, though knowledge was improved. Neither approach changed self-esteem, but in the interactive programmes this was not seen as a mechanism for reducing drug use.

Two-thirds of the programmes took on average just six hours to deliver. Longer programmes averaging 18 hours did slightly better. Only 16 programmes offered booster lessons, just four for more than one year. It is remarkable that such low intensity programmes affected behaviour – an evaluation of school health education found that nearly 30 hours were needed for behavioural change.<sup>16</sup>

#### Improving effectiveness

Though more effective than other programmes, still the impacts of interactive programmes were modest. Were these benefits of real importance? A study of the effects of aspirin on heart attacks which involved 22,000 doctors was cancelled because it was considered unethical to not offer the treatment to the control group.<sup>17</sup> That intervention's success rate was 3.5%. The interactive prevention programmes had a success rate of 9.5%, the non-interactive ones found in most schools 1%. The gap of 8.5% is clearly a 'clinically' significant benefit, particularly since as a whole the programmes averaged just 10 hours of classroom time. Doctors now advise all senior citizens to take an aspirin a day. Why, then, aren't we providing the interactive

### Golden Bullets

#### *Essential practice points from this article*

- ▶ Across 120 school drug prevention programmes aimed primarily at adolescents, interactive programmes were more effective than non-interactive programmes.
- ▶ Successful interactive approaches are characterised by pupil-to-pupil communication facilitated by small group activities including practice of interpersonal skills.
- ▶ Successful programmes focus on *interpersonal* competence and challenge overestimations of the extent of drug use among pupils' peers.
- ▶ Delivering such programmes requires a paradigm shift from 'instructing classes' to 'facilitating groups'.
- ▶ Implementing interactive programmes requires support from policy makers and education administrators and training to give teachers the skills and the confidence to work in what may be unfamiliar ways.



## What works

### CONTENT

#### Knowledge

- Long-term physical and psychological consequences
- Short-term effects such as 'cigarette breath' or car accidents

#### Attitudes

- Feedback from school surveys on estimates of friends' use
- Correction of perception of universal peer use
- Media and social influences that create pro-drug attitudes

#### Interpersonal skills

- Drug refusal
- Assertiveness
- Communication
- Safety, eg, ways to intervene in drink-driving situations

#### Intrapersonal skills *if combined with interpersonal skills*

- Self-esteem building
- Coping skills
- Stress reduction techniques
- Goal-setting
- Decision/problem solving

### DELIVERY

- Participatory
- Everyone included
- Structured activities to promote interaction between peers
- Rehearsal of drug refusal skills
- Role plays that are student generated
- Sufficient practice time
- Peer modelling of appropriate behaviour
- Supportive comments from group

## What doesn't work

### CONTENT

#### Knowledge

- Knowledge component lacking
- Media and social influences not addressed

#### Attitudes

- Values
- Ethical/moral decision-making

#### Interpersonal skills

- Drug refusal skills omitted

#### Intrapersonal skills *without interpersonal skills*

- Solely self-esteem building
- Self-esteem combined with ethical/moral decisions
- Solely intrapersonal focus
- Goal-setting
- Coping skills
- Stress reduction

### DELIVERY

- Unstructured talk sessions
- Lectures
- Teacher-centred class discussions
- Passive participation

➤ ➤ ➤ **The question is not *whether* prevention programmes work, but how successful programmes can be made *more* successful**

programmes known to be 8.5% more successful than those currently provided to our young people?

The policy question is not *whether* prevention programmes work, but how the successful programmes can be made more successful. This may be possible if policy makers and school administrators and teachers are willing to:

- guide and support the implementation of interactive group teaching. This requires a paradigm shift from 'instructing classes' to 'facilitating groups';

- both in teachers' colleges and with present teachers, undertake the aggressive training needed to persuade and equip teachers to implement such lessons;

- realise that most successful programmes are developmentally appropriate for younger adolescents and will not maintain their appeal or effectiveness for older pupils. For these pupils funding is needed to develop and test innovative programmes which realistically deal with adolescent use and, in many cases, abuse of drugs;

- fund in a manner which will ensure that long term goals are met. For example, discontinue short-term funding with mandates that force administrators to address certain grades, subjects or populations;

- drop unrealistic expectations of long-

term results from low intensity (10 hours) programmes given once in early adolescence. Instead, fund programmes with grade-appropriate yearly boosters to increase intensity to a 'critical mass'. 🌍

1 Klitzner M.D. *Report to Congress on the nature and effectiveness of federal, state, and local drug prevention/education programs. Part 2: an assessment of the research on school-based prevention programs.* US Department of Education, 1987.

2 Hopkins R., *et al.* "Comprehensive evaluation of a model alcohol curriculum." *Journal of Studies on Alcohol*: 1988, 49(1), p. 38–50.

3 Chaney B., *et al.* *Prevention activities of state education agencies. Report to Congress on the nature and effectiveness of federal, state, and local drug prevention/education programs. Part 4.* US Department of Education, 1988, p. 1–19.

4 Ennett S., Tobler N., *et al.* "How effective is drug abuse resistance education? A meta-analysis of Project DARE outcome evaluations." *American Journal of Public Health*: 1994, 84(9), p. 1394–1401.

5 Tobler N.S., *et al.* "Effectiveness of school-based drug prevention programmes: a meta-analysis of the research." *Journal of Primary Prevention*: 1997, 18(1), p. 71–128.

6 Bangert-Drowns R. "The effects of school-based substance abuse education: a meta-analysis." *Journal of Drug Education*: 1988, 18(3), p. 243–264.

7 Botvin G. "Substance abuse prevention: theory, practice and effectiveness." In: Tonry M., *et al.*, eds. *Drugs and crime.* University of Chicago Press, 1990, p. 461–520.

8 Bosworth K., *et al.* "Content and teaching strategies in ten selected drug abuse prevention curricula." *Journal of School Health*: 1993, 63(6), p. 247–253.

9 Brown, J. *et al.* "On becoming 'at risk' through drug education: how symbolic policies and their practices affect students." *Evaluation Review*: in press.

10 Hansen W. "School-based substance abuse prevention: a review of the art in curriculum, 1980–1990." *Health Education Research*: 1992, 7(3), p. 403–430.

11 Tobler N.S. "Meta-analysis of adolescent drug prevention programs: results of the 1993 meta-analysis." In: Bukoski W.J., *ed.* *Meta-analysis of drug abuse prevention programs.* US National Institute on Drug Abuse, 1997.

12 Botvin G., *et al.* "A cognitive behavioral approach to substance abuse prevention: one year follow-up." *Addictive Behaviors*: 1990, 15, p. 47–63.

13 Fowler W., *et al.* "School size, characteristics, and outcomes." *Educational Evaluation and Policy Evaluation*: 1991, 13(2), p. 189–202.

14 Bachman J., *et al.* "How changes in drug use are linked to perceived risks and disapproval: evidence from national studies that youth and young adults respond to information about the consequences of drug use." In: Donohew L., *et al.*, eds. *Persuasive communication and drug abuse prevention.* Lawrence Erlbaum Associates, 1991, p. 133–155.

15 Johnston L., *et al.* *National survey results on drug use from the Monitoring the Future Study, 1975–1994. Volume 1, secondary school students.* US Government Printing Office, 1995.

16 Connell D., *et al.* "Summary of findings of the School Health Education Evaluation: health promotion effectiveness, implementation, and costs." *Journal of School Health*: 1985, 55(8), p. 316–321.

17 Rosenthal R. "Parametric measures of effect size." In: Cooper H., *et al.*, eds. *The handbook of research synthesis.* New York: Russell Sage Foundation, 1994.

18 Bovard J. "DARE's dying gasp." *Irving News*: 24 September 2000.

19 Janofsky M. "Antidrug program's end stirs up Salt Lake City." *New York Times*: 16 September 2000.

**NUGGETS** 1.11 • The danger of warnings, issue 1 • Education's uncertain saviour, issue 3.