

Youth Teaching Youth: Evaluation of the Alcohol/Tobacco Decisions cross-age teaching program

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Abstract

The Alcohol/Tobacco Decisions (ATD) program was developed by the Extension Service in a midwestern state. The program's unique format of cross-age teaching uses local high school students to instruct fourth-grade students, rather than the typical teacher-to-student format. The ATD program operates under the 4-H model of promoting positive youth development and older

youth teaching younger youth. To begin to evaluate the effectiveness of the ATD program in changing students' knowledge of alcohol, tobacco, and advertising, students completed a pre- and post-test. This pilot evaluation yielded statistically significant improvements in knowledge in all content areas. Future directions for evaluation of cross-age teaching programs are explored.

Keywords: cross-age teaching, drug education, youth development, alcohol, tobacco, 4-H

Introduction

The Youth Teaching Youth program, Alcohol/Tobacco Decisions (ATD), was developed 18 years ago by the Extension Service in a midwestern state with the primary goal of teaching youth about important life issues. However, in this program, youth are not taught by their classroom teachers, but rather by high school students trained in the program curriculum. The ATD program was built and continues to operate under the 4-H model of promoting positive youth development.

Literature review

Cross-age teaching is a form of education in which teens serve as teachers for younger youth (Building Partnerships for Youth E-Bulletin 2004). It is a remarkable concept, as both parties involved have been shown to reap the benefits of learning, friendship, and social growth (Thomas 1993). Students are more apt to talk with peers about important issues than they are with adults (Tanaka and Reid 1997), and the smaller age disparity helps teen teachers present material in terms that youth are more likely to understand (Gaustad 1993). While all of these benefits help to improve students' well-being and knowledge, teen teachers are also receiving a life changing experience. Cross-age teaching provides teen teachers with an opportunity to discover their own creativity and competence (Friedman 1996), and their involvement provides them with a sense of belonging (Foster-Harrison 1997). Teen teachers also benefit from the review of topics taught during the drug education program, contributing to their own drug-free lifestyle (Palmer et al. 1989). Some researchers would go as far as to say that it is the most effective way of providing opportunities for positive youth development and encouraging youth to avoid delinquent behaviors (e.g., Resnick and Gibbs 1986).

In addition, researchers have identified characteristics that have been found to produce effective cross-age teaching programs. Specifically, they include a committed program director working closely with the teens, high expectations for the personal responsibility of the teenage volunteers, and training sessions for the teens involved (Lee, Murdock, and Paterson 1996). Further, Lee and Murdock (2001) found that active teen recruitment, strong curriculum, attention to detail, recognition and reward, team building, and feedback and evaluation are all vital parts of a promising youth program. Building on a positive youth development framework, the ATD

program incorporates these strategies. A positive youth development framework employs youth as partners in programs, and is focused on youth as active participants in their own development. It focuses on the strengths of young people, and provides youth with the supports and opportunities they need for positive developmental outcomes (e.g., Eccles and Gootman 2002).

The director and funders of the ATD program are taking a step in the right direction by evaluating the short-term knowledge gain of program participants. This provides a critical foundation for future research to evaluate behavior change, skill development, and long-term retention of knowledge. Next, we describe the ATD program and the results of this preliminary program evaluation.

Alcohol/Tobacco Decisions (ATD) program

The Alcohol/Tobacco Decisions program was developed during the 1988-89 school year to teach fourth-grade students about alcohol, tobacco, and seatbelt safety. The program added content about the effects of advertising and dropped seatbelt safety in the early 1990s, after numerous studies revealed the strong influence that advertising has on youth. More specifically, program content is updated annually by the program director. In 2004, the program reached 78 classrooms, cutting across two school districts, in one midwestern county. These primarily Caucasian school districts include urban and suburban communities of varying socioeconomic status. The program consists of three, one-hour sessions taught over three weeks. Volunteer high school students are trained to educate youth in the ATD program curriculum by the program director. Groups of two to three trained teen teachers deliver the ATD program in individual classrooms while serving as peer role models to the fourth-grade students.

Methods

To begin to evaluate the effectiveness of the ATD program at increasing students' short-term knowledge gain, pre-tests were administered to students before the program began. Tests were composed of 10 true and false knowledge questions and a fill in the blank question asking students to "identify two ways that you could say no" (Figure 1). The post-test, composed of the same questions as the pre-test, was administered to students on the final day of the program. Questions on the pre- and post-tests covered three main topics: facts about tobacco, facts about alcohol, and effects of advertising. Three-hundred forty-one randomly selected matched pre- and post-tests from 14 grade schools, and 35 classrooms were coded and entered into SPSS for evaluation by the first author. All participants were in the fourth grade, however no other demographic information was collected.

Results

Students' pre- and post-test questions were scored with a 1 for a correct answer and 0 for an incorrect answer. Six scores were then computed to evaluate students' knowledge by summing questions in that content area for pre- and post-tests independently. The first scale was "overall," which represented the students' total score on all 10 questions (maximum score = 10). The second scale "alcohol" (maximum score = 4) was the sum of students' responses to the four alcohol-related questions. The final scale "tobacco" (maximum score = 3) represented the students' score on the three tobacco-related questions. Students who did not answer all of the questions in a given scale were not included in the analyses of that score. Advertising was not used as a variable in this evaluation because the three survey questions regarding advertising asked about conceptually different aspects of the subject. Paired sample t-tests were computed between the pre- and post-tests, yielding statistically significant improvements from pre- to post-test on all three scales. (See Table 1.)

Next, a crosstabulation was computed to determine if scale scores differed by school. Only students' pre- ($\chi^2(52, N=338) = 77.29, p<.05$) and post-test ($\chi^2(39, N=340) = 57.45, p<.05$) alcohol score differed by school. As a result, paired sample t-tests were computed for each school independently to determine if there was a significant change in short-term knowledge of alcohol within school. Nine out of 14 schools did demonstrate a statistically significant increase in knowledge. The five schools that did not had extremely small sample sizes (n ranged from 3 to 19), and three of these schools had a pre-test score greater than 3.0, leaving little room for improvement. Together, this likely explains the findings.

Table 1. Summary of ATD evaluation results

Scale	n	Pre-test range	Mean pre-test score	Post-test range	Mean post-test score
Total score*	326	2-10	7.63	4-10	9.06
Alcohol*	338	0-4	2.85	1-4	3.64
Tobacco*	341	0-3	2.68	1-3	2.90

*p<.001


Figure 1. ATD Post-test questionnaire

Youth Post Questionnaire

Your teacher: _____

Your school: _____

Your initials: _____



**Alcohol and Tobacco Decisions . . .
What Do You Know?**

True or False? Circle One:

1. Nicotine, the active ingredient in tobacco, is an addicting drug.	T F
2. A bottle of beer, a glass of wine or a shot of hard liquor, all have the same amount of alcohol in them.	T F
3. A cold shower and a lot of coffee will make a drunk person sober again.	T F
4. Children who live with someone who smokes have more breathing problems, are hospitalized more and miss more school.	T F
5. Using tobacco products can cause cancer.	T F
6. Alcohol is a depressant that slows down the body and mind.	T F
7. Consuming alcohol does not affect a person's driving.	T F
8. Peer pressure can be positive or negative.	T F
9. Magazine ads give you all the facts you need to know about the product they are trying to sell.	T F
10. Cigarette companies advertise by displaying their name on promotional flyers and billboards at sporting events.	T F

List 2 ways you can say "No".

1. _____

2. _____

Discussion and implications

Evaluations of the ATD pre- and post-tests have shown the positive impact ATD had on fourth graders' short-term knowledge of alcohol, tobacco, and advertising. Total test scores and tobacco scores were both shown to increase significantly after youth completed the ATD program.

Alcohol scores increased significantly in 64 percent of schools sampled. While the evaluation of the ATD program has shown that the combination of drug education and cross-age teaching can create positive results in increasing youths' short-term knowledge on subject material that other programs have had problems enhancing, these results must be viewed as preliminary, providing a critical foundation for future evaluations of cross-age teaching programs.

Findings from this evaluation suggest four key directions for evaluation of cross-age teaching programs. First, future research should use a control group, a group receiving the same

information from their classroom teachers. This would allow researchers to determine whether cross-age teaching is more effective than traditional teaching methods. Second, a follow-up survey with students one to two years after program completion would help evaluate long-term retention of knowledge. Third, while students' knowledge increased on a short-term basis, it is critical to evaluate the impact of cross-age teaching on students' behavior and skill development. This should be evaluated both in the short-term and long-term. Fourth, teen teachers should be evaluated throughout the year to both understand the skills and knowledge they themselves are gaining as well as to improve their effectiveness as teachers. Cross-tabs and chi square analyses revealed that alcohol scores differed significantly across schools. It is possible that different teaching methods and teaching effectiveness of teen teachers may have contributed to this. Teen teachers in schools or classrooms with higher scores should be evaluated to see differences between their teaching styles and styles of teen teachers in schools or classrooms with lower scores. This would allow the program director to provide more training to teen teachers who need it, to help ensure consistency in program quality across classrooms, and to optimize each student's chance of learning.

The Alcohol/Tobacco Decisions program displays all the criteria suggested to effectively educate youth on important life issues, while also giving high school students an opportunity to initiate leadership. This pilot evaluation provides evidence of the effectiveness of the ATD program, and provides the groundwork for future evaluations of cross-age teaching programs.

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