

Let's Talk About Logic Models

By Amy Vincus, MPH

How could understanding the Project ALERT Logic Model help me?

During the 2000-2001 school year, a colleague and I visited 14 schools across the country to study their implementation of the Project ALERT curriculum. During our visits, we observed one Project ALERT lesson at each school. We also interviewed all of the instructors whose lessons we had observed. A couple of instructors told us that training about broader substance use prevention issues, in addition to the specific techniques of curriculum implementation, would help teachers become better prevention educators (Vincus et al., 2002).

In the course of our visits, we discovered that instructors who were well versed in prevention science had a better understanding of the key components of the Project ALERT curriculum. Their understanding of the curriculum and, more generally, of substance use prevention informed their teaching. They were less likely to make changes to their lessons and those that they made tended to be more positive (Dusenbury, 2004; Vincus et al.; Project ALERT best practices). Further, teachers who positively adapt their lessons were more likely to adhere to their curriculum, whereas teachers making negative adaptations did not follow the curriculum as closely. "One teacher had students role-play a situation instead of discuss it. Conversely, one teacher had students estimate peer marijuana use, but never compared estimates to actual rates, leaving the erroneous impression that marijuana use was commonplace" (Dusenbury, 2004, p.3).

Our focus in discussing logic models in general, and Project ALERT's logic model in particular, is to enhance your understanding of the curriculum and thus ensure that any changes you make to it will benefit your students.

What is a logic model?

A logic model is a diagram that links a program's theory and activities to its goals (usually moving from left to right across the model, with arrows indicating the relationships among its parts). A logic model for a substance use prevention program explicates the processes by which that program is expected to affect a set of risk and protective factors associated with substance use and, through them, prevent or reduce substance use itself. Logic models are developed to guide program evaluations. As you might expect, the Project ALERT Logic Model specifies the outcomes that were tested during its evaluations.

Let's examine the Project ALERT Logic Model in greater depth.

Universal &
Selective
School-
based
(7th & 8th
graders)

If you'll follow along using the insert at the end of this article, first note that the box farthest to the left constitutes the Project ALERT Logic Model's starting point.

Here we learn that Project ALERT is a school-based curriculum that is intended for use with 7th and 8th graders. In this box (as shown on left), Project ALERT is described as "universal," meaning that it is intended for a general population of students (such as all 7th and 8th graders). In this box, the curriculum is also described as "selective," meaning that it is appropriate for 7th and 8th graders who may be at greater risk of using substances because they are, for example, poor academic achievers or children of alcoholics.

From there, we move to the second column labeled **THEORY** and the boxes below it. The Logic Model indicates that the program has three theoretical components (as indicated by the three boxes) that guided the development of the Project ALERT curriculum. Those three theories are as follows:

- Making youth aware of accurate information regarding the prevalence and acceptability of substance use encourages the acceptance of non-drug-use norms
- Developing resistance skills for gateway drugs fortifies the psychological and social barriers to more serious drug use
- Increasing awareness of the benefits of non-use and the consequences of use diminishes intentions to use drugs

Having laid out the theories behind Project ALERT, the next step is to explain the activities and strategies that these theories suggest.

The activities are grounded in the theories, as shown on the Project ALERT Logic Model by the bracket from the three theory boxes with an arrow pointing to the **CURRICULUM** box (sample right).

As depicted by the Model, the theories also have a role in instructor training, which helps teachers understand the rationale underlying the program. In addition, the Logic Model indicates that instructor training is necessary for appropriate curriculum implementation (as indicated by the arrow that flows from the **INSTRUCTOR TRAINING** box to the **CURRICULUM** box). Only those instructors who have been trained should implement the curriculum.

Students participate and actively engage in class lessons

As we move to the box in the fourth column, the Logic Model shows us that **INSTRUCTOR TRAINING** and the **CURRICULUM** are both important elements in encouraging students to participate and actively engage in class lessons.

Curriculum

Seventh Grade:

Eleven core lessons designed to build the motivation and skills necessary for effective resistance to negative peer pressures by targeting gateway drug use

- Students engage in participatory

activities, including guided classroom discussions, small group activities, role-playing, repeated skills practice

- 8 interactive videos reinforce classroom activities by modeling appropriate behavior

Eighth Grade:

Three additional booster lessons designed to reinforce the classroom-based lessons

To reach its goals, the Project ALERT curriculum requires students who participate and actively engage in its lessons. The Project ALERT Logic Model includes three types of goals or outcomes, namely immediate, intermediate, and final. If students participate and actively engage in the Project ALERT lessons, then five immediate outcomes are expected to occur, as described in the five boxes in the fifth column on the Logic Model (samples below).

Students gain knowledge of negative effects of drug use and benefits on non-use

Students develop an accurate perception of the acceptability and prevalence of drug use

Students become models of pro-social behavior in the schools

Students practice skills to resist negative peer pressure

Students increase their positive peer bonding

Note that if students do not participate or actively engage in their Project ALERT lessons, then the likelihood that the Project ALERT curriculum can achieve its immediate outcomes (or any other outcomes) is greatly reduced.

In addition, the immediate outcomes must occur to reach the intermediate outcomes. As shown on the Logic Model, the five immediate outcomes lead directly to five intermediate outcomes. The Project ALERT Logic Model becomes somewhat complex at this point because the immediate outcomes have varying relationships with the intermediate outcomes. For example, the top box in column 5 (“Students gain knowledge of negative effects of drug use and benefits of non-use”) is linked directly to two intermediate outcomes, and the third and fourth boxes in column 5 are both linked to three intermediate outcomes. Thus achieving some of the intermediate outcomes requires the successful accomplishment of several immediate outcomes.

As we consider the intermediate outcomes in the columns 6 and 7, it is clear from the model that something novel is occurring as we move to the right of the Logic Model. These two sets of intermediate outcomes are linked to the final outcomes via two kinds of paths: direct (black lines) and indirect (orange lines).

In the Project ALERT Logic Model, each of the five intermediate outcomes in column 6 has a direct path to the final outcomes, as described in the single box in the eighth and final column. These intermediate outcomes are also believed to affect the final outcomes box via the “Reductions in intentions to use” box. The path from “Students perceive fewer pro-drug pressures from peers” to “Reductions in the onset and regular use of substances” is indirect in nature, while the relationship between “Students perceive fewer pro-drug pressures from peers” and “Reductions in the onset and regular use of substances” is a direct one. What this means is that Project ALERT expects to achieve its ultimate goal, “Reductions in the onset and regular use of substances,” by a number of pathways. Each pathway contributes something towards this objective, but the size of the reduction in use is likely to be largest when Project ALERT successfully makes a difference with all the intermediate objectives specified in the Model.

As you can see, Project ALERT’s final outcomes boxes reflect the curriculum’s overall goals of “Reductions in the onset and regular use of substances, specifically tobacco, alcohol, marijuana, and inhalants (gateway drugs).” Gateway drugs are those that students are most likely to experiment with first; and it is thought that they typically are used before students’ drug use escalates to “harder” drugs (Kandel, 1975).

Having described the Project ALERT Logic Model in great detail, we return to the lessons we learned during our school visits. We noted that teacher training about substance use prevention and how Project ALERT lessons fit into the science that supports substance use prevention would be worthwhile. We hope that this article is a step toward improving your understanding of Project ALERT’s underpinnings and its fit with prevention science. The next time someone asks you to explain how Project ALERT works, you will be ready.

Amy Vincus’ interests in youth, schools, and substance use prevention have been combined in a career that focuses on school-based prevention projects.

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References

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