

Participatory Action Research: creating an effective prevention curriculum for adolescents in the Southwestern US

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Abstract

Existing research confirms a need to seek strategies that combine the strengths of researchers and community to create effective prevention curricula for youth. This article describes how components of Participatory Action Research (PAR) methodology were used to create the *keepin' it REAL* Drug Resistance Strategies (DRS) curriculum designed for a diverse Southwestern US youth population. School community participants were involved in multiple stages of creation and implementation. The research team developed a systematic process for creating lessons built upon strong theoretical foundations, while teachers and students contributed lesson modifications and evaluations, suggestions for supplemental activities, and the actual production of instructional videos. While the experimental design and some methodological constraints served to limit school community involvement in some phases of the DRS project, this article describes how PAR methodology ensured that researchers collaborated with school community members to create this promising drug prevention curriculum. Results of the *REAL* experiment, discussion of the use of

this methodology, implications and recommendations for future research also are included.

Introduction

In the fight against the American epidemic of drug addiction, a common approach to prevention is school-based programming especially geared toward adolescents. Mandated by legislative decree to include drug prevention curriculum, schools are forced to (1) create their own drug prevention curriculum or (2) purchase a commercially made curriculum developed by 'experts'. Historically, when schools have opted to create prevention curricula, the reason has been that commercially made programs were too generic (Bosworth, 1998). While locally developed programs may be better geared to the local youth, their effectiveness has been questioned because few include a systematic process for evaluating outcomes (Bosworth, 1998).

Recent studies (Bosworth, 1998) identified the need for an implementation process that allows schools to benefit from expert knowledge in addition to community/teacher input. One collaborative methodology that may meet that need is Participatory Action Research (PAR). During the past decade, PAR gained importance as a methodology in social research (Stoecker, 1999). To the extent that the purpose of social research is to resolve problems in a way that positively affects the larger community, PAR advocates argue for direct community input. As a systematic approach to development and evaluation is essential to effective prevention programming, PAR may link the expertise of community groups to academic research.

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Prior research demonstrated that a sense of community ownership was crucial to prevention program effectiveness (Botvin, 1986). Kuykendall (Kuykendall, 1992) reported that the most successful prevention models were those in which the culture and learning styles of the recipients are reflected (Kreischer, 1999; Barron, 2000; Chipongian, 2000). This may be especially true for minority children—found to respond more favorably to programs in which the teachers or characters presented are members of their own group (Dorr, 1982; Eigen and Siegal, 1991). Researchers may involve youth more effectively by integrating PAR methods so as to include students and members of the school community in the research process.

The Drug Resistance Strategies (DRS) project provides a format appropriate for evaluating the use of PAR methodology in prevention program development. DRS is a multifaceted drug prevention program designed to test the effectiveness of culturally grounded prevention tailored to students in the culture of the Southwestern US where the Latino student population ranges from 65 to 100%. DRS followed students through Grades 7 and 8 to test if the curriculum intervention changed their drug attitudes and behaviors. Nearly 5000 students participated in the DRS program entitled *keepin' it REAL*, a 10-lesson curriculum taught by teachers identified by each school and supplemented by separate videos illustrating each of the core strategies—Refuse, Explain, Avoid and Leave.

Because of the theory-driven experimental design, researchers initiated the full scope of DRS with the intention of partnering with the school community to develop the intervention and to implement the experiment within the schools. Given that adherence to theoretical underpinnings, rigorous methodology and systematic evaluation are essential to effective programming, researchers controlled these functions while simply guiding other phases. While the experimental design and some methodological constraints served to limit school community involvement in some phases, the immersion of the school community, i.e. teachers, principals, middle school students and high school

students, was crucial to creation of the curriculum, videos and supplemental materials. In these efforts, participants played a pivotal role; their decisions regarding the instructional materials were adopted, reinforcing the expertise of the students and teachers.

This paper focuses on DRS curriculum development, especially how PAR methodology promoted teacher and student involvement. The key aims of the paper are (1) to highlight the need for researcher/community partnerships for effective drug prevention programs, and (2) to illustrate how PAR was used to accomplish the goal of ensuring direct participation of the school community experts as consultants and collaborators. The paper also speculates about the capacity of PAR to enhance the effectiveness of prevention curricula and offers recommendations to use PAR more fully in drug prevention research. A literature review centered on the importance of PAR and culturally grounded prevention programming, how DRS conceptualized and integrated both in the curriculum, a methodology overview of PAR and the DRS experiment, and a discussion of the findings of each from an evaluative perspective are included, as are limitations of the study and suggestions for future research.

Literature review

Defining PAR

Generally, PAR methodology is distinguished because it is collaborative, involving direct participation of the community being studied (Dickens and Watkins, 1999). PAR has been used in public health and in social science (Israel *et al.*, 1998). Although Stoecker (Stoecker, 1999) and Israel *et al.* (Israel *et al.*, 1998) noted that PAR labels vary (e.g. participatory research, participatory action research, community research, community-based research) and goals for PAR may differ by circumstances, the methodology emphasizes social change to solve practical problems (Dickens and Watkins, 1999).

Challenges inherent in PAR

The collaborative nature of PAR presents challenges such as lack of trust and respect among participants, conflicts over perspectives and processes, and complex methodological problems (Israel *et al.*, 1998). Also, ideas vary about community representation, the degree of community involvement, conceptualizations of the roles assigned to all parties, and disputes over the equity of power relations among academics and community participants.

Defining community

Important to discussions of PAR is the definition of 'community', especially as there are many definitions and disputes over who represents the community. According to Wang *et al.* (Wang *et al.*, 1998), communities are comprised of many different types of local people such as children, parents, teachers, community organizers and policy makers. Robertson and Minkler supported Rifkin *et al.* (Rifkin *et al.*, 1988) in defining community as concretely as 'a group of people living in the same defined area sharing the same basic values and organization' [(Robertson and Minkler, 1994), p. 303] or as abstractly as 'a group of people sharing the same basic interests' [(Robertson and Minkler, 1994), p. 933]. For this discussion, community is defined as those participants other than university researchers involved in DRS, especially school community members such as school superintendents, principals, and, most particularly, local teachers and students from a large metropolitan city in the Southwestern US.

Issues of power

The issues of power, empowerment and levels of community involvement have received focused attention (Bernstein *et al.*, 1994; Israel *et al.*, 1994; Robertson and Minkler, 1994; Green *et al.*, 2001). These authors provide multiple conceptualizations of power, and the proper relationship between researchers and community. According to Bernstein *et al.*, 'Community power then refers to the ability of a community or collectivity to create change' [(Bernstein *et al.*, 1994), p. 283]. In terms

of public health, those authors argue that researchers should strive for collective efforts in which the community is empowered to make change, where community empowerment 'refers to the process by which a community gains this power' [(Bernstein *et al.*, 1994), p. 283].

Contradictions and paradoxes challenge empowerment efforts. For example, power should be shared rather than wielded over others, yet some members of a partnership may have more resources than others, allowing them to be viewed as occupying a power position. Similarly, empowerment can be seen as patronizing when people with more power create an avenue to power for less powerful persons rather than the less powerful exercising their own agency to seize power [Labonte in (Bernstein *et al.*, 1994)]. When viewing community issues, university researchers are socialized to believe they are in a helping position as 'the experts'. Nonetheless, their goal of empowerment should be to move away from all forms of deficit models (Bernstein *et al.*, 1994).

According to Gutierrez [in (Bernstein *et al.*, 1994)], the extent to which organizers or researchers guide processes and the extent to which the community members make decisions are important issues of power. Robertson and Minkler [(Robertson and Minkler, 1994), p. 305] noted:

Full community participation occurs when communities participate in equal partnership with health professionals in setting the health agenda—in defining their health problems and developing the solutions to address these problems.

Thus, researchers should analyze the power relationships they establish with community members and should redefine themselves as 'consultants to the community', providing technical and or informational support to facilitate the mobilization of the community (Green *et al.*, 2001).

In a PAR strategy called 'photovoice', Wang *et al.* (Wang *et al.*, 1998) used photographs to create discussions about issues of power among local people. While this strategy of giving cameras to community participants to record their lives

through their own eyes gave rural women the opportunity to influence policy, it did not empower them to *decide* policy. Although the women did not have decision-making power and did not initiate the project, Wang and her colleagues conceptualized their project as PAR because the objective of the study was to empower members of the community who had the least power and to encourage those with the most power to be more responsive to locally perceived needs. This example of PAR, although constrained, was supported as valid PAR methodology by Green *et al.* [(Green *et al.*, 2001), p. 28] who stated:

The key to participatory research lies not with any given method, but, rather, in the attitudes of researchers, which in turn affect how and for whom the research is constructed and conducted.

Levels of community involvement

Combined with issues of power, questions regarding levels of community participation in research are prominently debated in PAR discussions. Wang *et al.* (1998) presented Biggs' (Biggs, 1989) four modes of research participation (i.e. contractual, consultive, collaborative and collegiate) in a discussion of whether or not researchers should strive for full participation of the community at all stages in order to be considered as 'true' PAR. What may be most important in PAR methodology is that all partners benefit, and that the skills of both the researchers and local people are integrated to maximize the efficient and appropriate use of their expertise. Wang *et al.* noted '... Biggs' definition of collegiate participation recognizes that community members, local policy makers, and university academics each bring different talents to the table...' [(Wang *et al.*, 1998), p. 85]. To maximize efficiency, community participation may be more valuable at certain stages of the research process than at others. 'In practice, many tasks associated with the PAR process may be burdensome, impractical, or even infeasible for some participants' [(Wang *et al.*, 1998), p. 84]. Although the debate may continue, the Wang *et al.* (Wang *et al.*, 1998)

contribution offers a credible amplification of how roles may be conceptualized and the extent to which community inclusion may enhance methodology.

Benefits of collaborative methodology in prevention research

Despite inherent challenges, PAR models have emerged as the methodology of choice in some research arenas, especially in public health where disparities in quality and access to healthcare between whites and minorities are exacerbated by social conditions (Israel *et al.*, 1998). Inherently responsive to the environment, PAR models may be beneficial in drug prevention program research and development (Dryfoos, 1990; Bachman *et al.*, 1991; Flannery *et al.*, 1994; Kandel, 1995; Hecht *et al.*, 1997; Moon *et al.*, 1999) as drug attitudes and behaviors vary based upon environmental factors in communities. According to Israel *et al.* [(Israel *et al.*, 1998), p. 180], community-based collaborative research is ideal because it:

...bridges cultural gaps, involves marginalized communities, and improves the quality and validity of research by engaging local knowledge and local theory based on the lived experience of the people involved.

Thus, PAR emerges as an ideal model, blending the strengths of academic 'experts' with the strengths of community participants.

Need for PAR in school-based prevention research

In overviews, the effectiveness of locally made curricula has been questioned because of the absence of rigorous methodology. Fredisdorf (1989), cited in Bosworth (Bosworth, 1998), surveyed Wisconsin K-12 public schools and found that a high percentage (67%) developed drug prevention curricula locally or created programs by combining portions of commercial curriculum with their own. Bosworth [(Bosworth, 1998), p. 307] also found that the localized process was:

...characterized by high levels of involvement by a variety of personnel, low levels of training, little use of resources outside the school corpora-

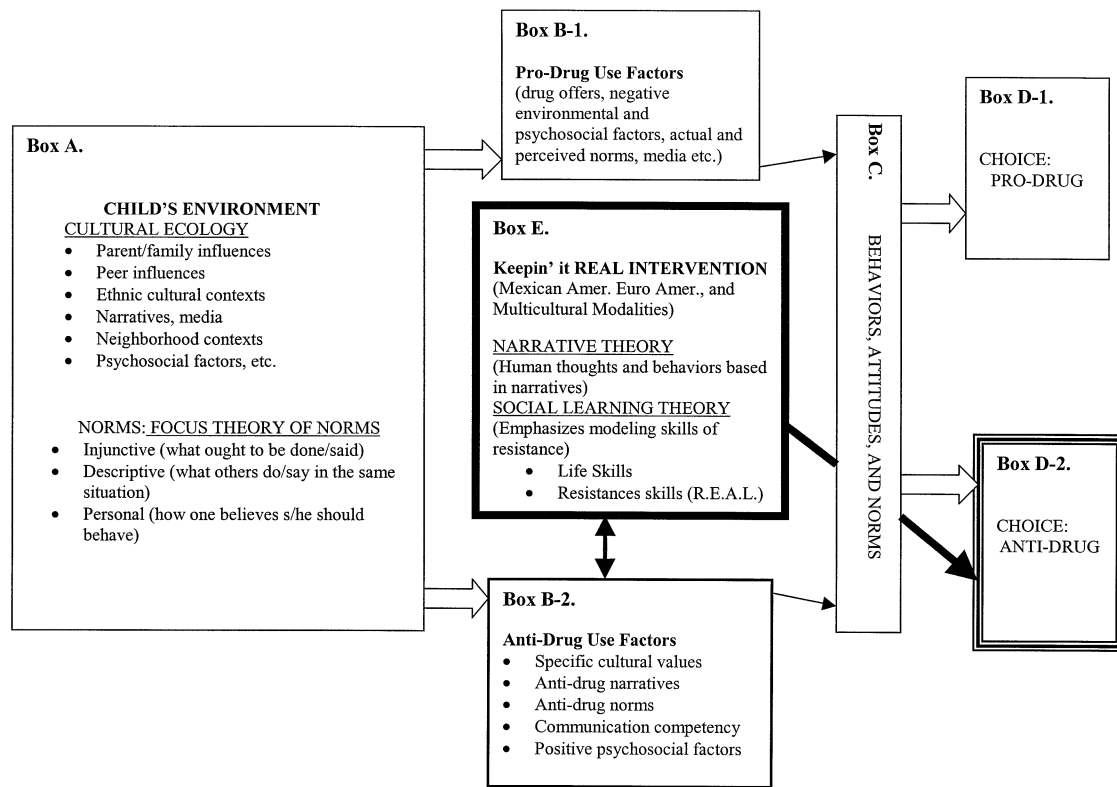


Fig. 1. Conceptual framework and theoretical foundations driving the culturally grounded *REAL* curriculum. Block arrows indicate boxes are connected or components of each other. Direction of arrows shows direction of influence.

tion, poor training of teachers who will be implementing the curriculum, and little evaluation.

Without an empirically grounded curriculum, desired outcomes are unlikely and fewer than one-third of the schools had undertaken a systematic, empirically grounded process of development (Bosworth, 1998).

Although other schools decided to purchase highly touted, commercially made curricula, Hill *et al.* (Hill *et al.*, 1993) and Dusenbury (Dusenbury, 1996) reported that most commercially available curricula also had not been rigorously evaluated. According to Bosworth's overview [(Bosworth, 1998), p. 324], the literature indicates that:

Educators well grounded in prevention theory, empirically developed activities and materials,

and a cadre of resource consultants would help local schools to develop quality curricula sensitive to community needs for prevention of drug abuse.

DRS conceptual framework and ethnic-grounded approach

Due to the large Mexican/Mexican-American populations in the DRS sample, researchers wished to ensure that representations of Mexican culture were visible in the curriculum in addition to African-American and European-American cultures. Indeed, Lopez [(Lopez, 1999), p. 304] indicated there was a need for ethnically sensitive research to 'address the specific concerns of youth of Mexican origin and youth of other Hispanic groups'. Existing research supports consideration of the ethnic base of a community because ethnicity

has been correlated to risk of drug use (Kumpfer, 1989; Dryfoos, 1990; Kumpfer and Turner, 1990/1991; Bachman *et al.*, 1991; Duncan *et al.*, 1998), the degree of health risk (Pentz *et al.*, 1990), the type of drugs most commonly used (Maddahain *et al.*, 1985), and drug-related attitudes and behaviors (Kandel, 1995; Hecht *et al.*, 1997; Moon *et al.*, 1999).

Multiple theories inform the DRS culturally grounded approach. Cultural Ecology Theory emphasizes multiple levels of influence on child development (Vega and Gil, 1998) and the complexity of the child's interaction with the environment (Tolan *et al.*, 1995; Wiggins, 1995; Jardine *et al.*, 1998). Because of the importance of environment, especially family and culture of origin, norms and values from family and culture that discourage drug use may increase the effectiveness of prevention programs (Vygotsky, 1978; Cialdini *et al.*, 1990). The Focus Theory of Norms (Cialdini *et al.*, 1990) identifies norms which prevention efforts must target to influence behavior and attitude changes. In order to affect these changes, DRS prevention messages are based in narrative. According to Narrative Theory, narratives are a primary means for making sense of experience (White, 1981; Cook-Gumperz, 1993) and moral choices (Fisher, 1987), and serve as an organizing principle for behavior (Botvin, 1995). Narratives also have a cultural element as they are structured differently in different ethnic groups (Howard, 1991; Holland and Kilpatrick, 1993; Botvin, 1995). Social Learning Theory (Bandura, 1977) suggests that narratives can be used in a drug prevention program to bring about behavior change through modeling (Elkind, 1981). Social Learning Theory emphasizes the importance of modeling the skills of resistance within commonly confronted situations affecting adolescents (Bandura, 1977). Figure 1 illustrates the conceptual framework and theoretical foundations driving the research.

The environmental factors that influence a child to either make pro-drug or anti-drug choices and that target how the DRS program intervenes to promote anti-drug choices are illustrated in Figure 1. Box A represents the average child's environ-

ment which is composed of the cultural ecology and the norms children gain from interactions with the cultural structure. Boxes B-1 and B-2, components of the child's environment, are specific pro-drug (Box B-1) and anti-drug (Box B-2) factors that may influence a child's drug behaviors, attitudes and norms (Box C), leading to choices which are either pro-drug (Box D-1) or anti-drug (Box D-2). The level of factor influence dictates whether or not the child decides to engage in drug use. Utilizing Narrative Theory, Social Learning Theory, and life and resistance skills training, the *keepin' it REAL* intervention represented by Box E is designed to intervene and disrupt the factors that would lead to drug use. The intervention is designed to influence Box C towards an anti-drug choice. Most importantly, the bold double-headed arrow pointing to Box E and Box B-2 demonstrates that the intervention relies on and reinforces the anti-drug factors embedded in the student's environment.

Methodology

DRS pilot studies

DRS, begun in 1986, involved high school students who, when interviewed, indicated that prevention efforts were needed at earlier ages because their middle school siblings were using drugs. Input from local YMCA and Boys and Girls Clubs corroborated this need, and the project focus shifted to Grade 7. The opinions of the high school students proved effective in convincing school superintendents and principals that Grade 7 needed drug abuse interventions. A DRS community advisory board representing several segments of youth-based activities was formed. Principals participated as advisory board members, recruited teachers, reviewed surveys and suggested survey items useful to schools.

To guide conceptualization of pilot studies, needs assessments were compiled using statistical data from entities such as the Arizona Department of Education, and interview data gathered from students who had been questioned about their drug

behaviors, attitudes and the strategies they used to resist drugs. In relating behaviors used to resist drug offers, the most frequent student responses were established as the core strategies (Refuse, Explain, Avoid and Leave) of the *REAL* message (Hecht *et al.*, 1992). Focusing on these strategies proved consistent with the theoretical models (see Figure 1) identified as essential to drug prevention.

Overview of DRS longitudinal study

Literature highlights the importance of ethnically grounded approaches to drug prevention (Bachman *et al.*, 1991; Flannery *et al.*, 1994; Collins, 1995). Therefore, the first phase of DRS tested the effectiveness of ethnically grounded approaches to drug prevention. The experiment tested three intervention modalities, one targeting Mexican/Mexican-American cultural values, another targeting European/African-American values and a third culturally mixed modality that incorporated segments of each of the other two versions. These modalities reflected the demographics most represented in DRS school communities (see Table I).

The students at experimental sites participated in one pre-test and, following intervention in one modality, completed a series of three post-tests over 18 months to determine attitudes toward drug use, anti-drug behaviors, injunctive norms and personal norms. The experimental design (see Table II) includes the timeline and implementation phases of DRS.

DRS also tested if ethnic matching of the curriculum to the student population generated a greater response—whether or not students responded more favorably when the curriculum matched their ethnicity. Thus, a pivotal reason for DRS methodology to emphasize PAR was because it permitted community participants to serve as experts on community culture, rather than fostering a reliance on ‘ethnic glosses’ or simplistic, stereotypical representations of culture (Trimble, 1991, 1995; Collins, 1995; Marsiglia *et al.*, 2001).

PAR methodology: curriculum development process

REAL curriculum development, the focus of this paper, included multiple roles and functions for

Table I. Demographic profiles

Participants	Participant ethnicity					School enrollment			
	Mixed/other	African American	American Indian	Mexican/Mexican-American	White	Asian	Large (>800)	Medium (500-799)	Small (<500)
Teacher Focus Group 1 (members)	0	1	0	4	2	0	×	×	×
Teacher Focus Group 2 (members)	1	0	0	1	4	0	×	×	×
Teacher Implementers (52)	6	2	0	14	28	2	×	×	×
Mexican/ Mexican-American sites (9)	0%	6%	7%	64%	20%	3%	3	5	1
European/African American sites (8)	0%	8%	5%	65%	20%	2%	2	4	2
Multicultural sites (8)	0%	14%	5%	61%	17%	3%	2	6	0
Control Sites (10)	0%	15%	4%	65%	14%	3%	4	4	2

Information for teachers reflects the raw number of individuals within each category. The number in parentheses behind the condition name indicates the total number of schools assigned to that condition. For each condition, the ethnicity percentage reflects the average of all schools within the condition. School size numbers identify how many schools assigned to the condition fall into each size category.

Table II. *Experimental design and implementation phases*

	Fall 1998		Spring 1999		Fall 1999		Spring 2000
Mexican/Mexican-American	O ₁	X ₁	O ₂	B	O ₃	B	O ₄
European/African-American	O ₁	X ₂	O ₂	B	O ₃	B	O ₄
Multicultural	O ₁	X ₃	O ₂	B	O ₃	B	O ₄
Control	O ₁		O ₂		O ₃		O ₄

O = observations: O₁ = pre-test; O₂₋₄ = post-tests.

X = treatment: X₁ = Latino program; X₂ = Non-Latino program; X₃ = mixed program.

B = Boosters.

many groups of people, illustrating DRS use of PAR methodology (see Table III). The development team drafted lesson plans for teachers and activities for students based upon structures used in other highly evaluated curricula such as Project Star (Pentz, 1994) and Life Skills Training (Botvin *et al.*, 2000), and centered on the real-life drug-related experiences described by youth in interviews (Hecht *et al.*, 1992). In addition, following preparation of drafts, researchers gathered teachers and students to evaluate the plans and shape the final product. Finally, field-testing generated other modifications.

Focus Group I: teacher evaluation of preliminary lessons prior to implementation

Seven teachers of varying ethnic backgrounds and years of experience (see Table I) were asked to evaluate preliminary lessons and to give suggestions for improvement. To further validate the process, all teachers who served as evaluators had experience working in Phoenix middle schools. Teachers received tangible proof of the value of their involvement in the form of training, stipends and hours toward continuing education credit. Teachers rated the quality of each lesson based upon: (1) development of concepts and skills, (2) problem solving opportunities, (3) age and culture appropriateness, and (4) sound pedagogy. Participants shared ideas and recommendations about each lesson and the overall curriculum.

Teachers agreed that they (rather than a policeman or other outside source) should teach the lessons because of existing rapport with students. The established rapport between teacher and

students provides an environment in which teachers continuously encourage students to explore answers to questions and situations, actively participate in class, and develop different ways to solve problems. For example, Mike [pseudonyms used for all persons] stated:

I think there are stereotypes with the kids about police officers, so I don't know how much weight they give their opinions or suggestions...there's that animosity or lack of trust whether it's from the parents or from the peers themselves.

Teachers also provided valuable insight into general characteristics of Grade 7 students and how those might relate to lesson activities. For instance, Lynn commented on the sophistication of the language used in one of the lessons:

I did think it was a little bit simplistic for seventh graders, I thought it could use a little bit more sophistication... Because in the 50s, I know that when I was in school this might have been appropriate but for modern 90s youngsters I think it is just a wee bit immature.

The teachers discussed the subject of drugs and possible types of exposure to drugs or drug-related situations that students may have experienced. One teacher expressed concern that students might be dealing with problems of drug abuse within their families:

I think there's a stereotype out there that the kid is getting into drugs, and Mom and Dad are saying, 'Oh my God my kid's into drugs'. That's

Table III. Roles of participants in design, implementation and evaluation of REAL

Activities of the REAL research project	University research team	Practitioner teacher implementers	Practitioner curriculum developers	Other community consultants (adults/students)	Professional video producers	High school video producers	Graduate students/school liaisons
Pilot research							
secure funding	×			×			×
interview research assistants	×			×			×
conduct pilot video study	×			×	×	×	×
evaluate findings	×		×				
confirm theoretical foundations	×						
conceptualize REAL experiment	×		×				×
Secure funding for REAL 4-year study (NIDA #5 ROI-DA05629-07)							
assemble Arizona State University interdisciplinary research team	×		×				
identify specific research aims	×		×				
select the methodology	×						
recruit district and school participation	×			×			
randomize the sample	×						
ensure teacher participation from each school	×	×	×				
identify student incentives	×	×					×
Video production (simultaneous with Curriculum development)							
complete scriptwriting	×				×	×	×
perform scenarios					×	×	
complete filming					×	×	
conduct field-testing	×	×	×		×	×	×
evaluate feedback	×	×	×		×	×	×
finalize production plan	×				×	×	×
produce five distinct videos	×				×	×	×
Curriculum development (simultaneous with Video production)							
align learning objectives with theoretical foundations	×		×				
structure conceptual focus of lessons	×		×				
create lesson plans for teachers			×	×			
create instructional activities and worksheets, boosters		×	×				
conduct focus group with teacher practitioners		×	×				
provide evaluative feedback	×	×	×				
modify lessons		×	×				
field-test curriculum		×	×				
finalize curriculum and lesson plans			×				
Implementation in the schools							
conduct teacher training	×	×	×				×
complete fidelity ratings			×				×
complete observation forms	×	×	×				×
conduct focus group with teacher implementers		×	×				×
evaluate implementation process	×	×	×			×	×

not always the case. We see kids where Mom and Dad are into drugs, Grandma and Grandpa are into drugs, you know, it's not just the kid. And, its generation, generation, and generation and it's.... [The] kid comes home and Mom and Dad got the bong going and that's a reality.

Teachers encouraged the curriculum writers to find ways to allow students to share without having to incriminate themselves, to promote one-on-one sharing rather than using large group discussion structures and to eliminate 'touchy-feely' activities. Suggestions about dealing with sensitive topics were incorporated and several 'touchy-feely' activities were eliminated. For example, one exercise of 'feeling faces' was to be used to help students identify their emotions, but was deemed 'too elementary' for those in Grade 7. Another exercise, students linking arms, was eliminated because teachers believed the touching would elicit jokes.

For the purposes of the research, the curriculum writers wanted to know if teachers believed that taking cultural differences of their students into account was important. While teachers did not want the students to be labeled, they validated the premise. For instance, the need for Spanish versions of materials was a critical factor that had been overlooked. Due to the large proportion of students for whom Spanish is the first language, the focus group participants thought it imperative to include parallel Spanish materials. For instance, Carlos' school population is 90% Hispanic:

The majority of the time I teach in English. But there is a portion of the class time when I do have to give specific instructions and clarifications, that kind of thing, and I think to kind of put this population—the LEP [Limited English Proficiency] population aside and not have them fully participate I think would be a disservice. Especially, I think, in our district where, I believe, we're at about 75% Hispanic, and a large portion of that group is Spanish dominant at home. So, to bring that relevancy into this curriculum would be greatly beneficial.

Other teachers also expressed the need for Span-

ish materials, although from different viewpoints. Lorena expressed a concern about Special Education students.

If you're going to have activities for students, the teacher part can be in English—but if you're going to have worksheets, you need those worksheets in Spanish. And not just for our monolingual or our limited English proficient kids students, but you also need materials that are going to meet the needs of every student.

As a result of these discussions, all worksheets and homework assignments were made available both in English and Spanish.

The large number of LEP students spoke to the diversity of ethnic backgrounds in the schools. Teachers were aware that these differences mattered when planning lessons, as Lorena noted:

There are different ways that students respond and different ways that students can be taught. African-American students—and I've noticed the same thing with Native American students—they're better when they're taught in groups, when questions aren't directed at them as an individual, when they're not singled out, when the question is directed toward the group. And then they'll respond. And if each one of them learns, there's more cooperative learning, whereas with Anglos I've found that it's better when they're addressed directly and they tend to learn better when their needs are more direct than as part of a whole group.

Through their insights, the teacher participants validated DRS research rationale, and served as experts on the specific needs of those in Grade 7 and their teachers.

Field testing: student evaluation of lessons prior to implementation

To document student reactions to the curriculum, preliminary drafts of two lessons were presented in three Grade 7 classrooms. The classroom presentations gave the team a realistic perspective of the logistical challenges such as working with the

time allotment, maintaining student interest and focus, and adapting instruction to student comprehension levels. For example, initial lessons were too long to be conducted in the 40–45-min class period. Perhaps more importantly, first-hand feedback from students encouraged developers to modify lessons.

Logo design

After the concept of the program was explained, students from several Grade 7 classrooms worked to create the logo. Students created and judged samples, and ‘tweaked’ the designs to enhance their appeal. Different conceptualizations of how to use the *REAL* acronym were encouraged and of the choices, students determined that the best representation was *keepin’ it REAL* because that sounded ‘like something we would say’, and was a phrase often used in hip-hop and rap speech to delineate being true to self and community. The students also preferred artwork that used ‘bubble letters’—a graffiti look related to an urban style. The use of this artwork combined with the student-produced videos that used hip-hop culture and style contributed to student perceptions of the program ‘cool’ and ‘hip.’

Video production

Full investment of PAR was manifest in this phase, with youth assuming the greatest degree of ownership. A diverse group of students from a local communication arts magnet high school not only wrote the scripts, but also acted and produced the videos that illustrate the *REAL* strategies. Although the students worked with their teacher and two professional directors, they achieved creative ownership of the videos (Holleran *et al.*, 2002). After the research team met with the students, briefed them on the goals of the project and explained the need for their help, the students organized themselves to produce the videos. The videos were filmed in recognizable locales, allowing the targeted Grade 7 audience to relate to environmental and situational elements that represented their youth and ethnic culture. In addition, the videos gave the audience the oppor-

tunity to see enactments of successful drug resistance by youth who were similar to them in age and ethnicity.

PAR methodology: post-implementation process

During implementation, developers monitored instructional fidelity using observation forms that promoted on-going communication with teachers and students. Following the intervention, teachers were gathered for Focus Group II, a session focused on evaluative issues.

Focus Group II: evaluation of curriculum and individual lessons

Because all teachers in the group (see Table I) had taught the complete curriculum, the purpose of the focus group was to gather information regarding student receptivity and teacher responses. The reaction was unanimously positive. Participants shared student enthusiasm, noting many instances when students asked, ‘Are we having *REAL* class today?’. Teachers especially appreciated the chance to teach students the ‘tools’ to resist drug offers rather than a ‘standard message’ that was directive. Teaching life-skills, especially those associated with peer pressure, generated a strong positive response from the teachers.

Several areas of interest to these teachers related directly to PAR. For instance, teachers noted that the design of the lessons accommodated different teaching styles, facilitating personal investment. Using optional examples suggested prior to implementation, teachers were able to emphasize different points within the lessons, molding them to fit their particular teaching styles, while remaining true to the lesson content. Teachers also emphasized the value of Spanish materials to accommodate diverse student needs. Focus group participants affirmed the use of real-life scenarios to which students could relate. Teachers applauded the infusion of racial diversity, slang and youth language into the videos, and reported great student enthusiasm about them. One teacher commented, ‘The kids in the videos looked like our students’.

These teachers agreed that researchers’

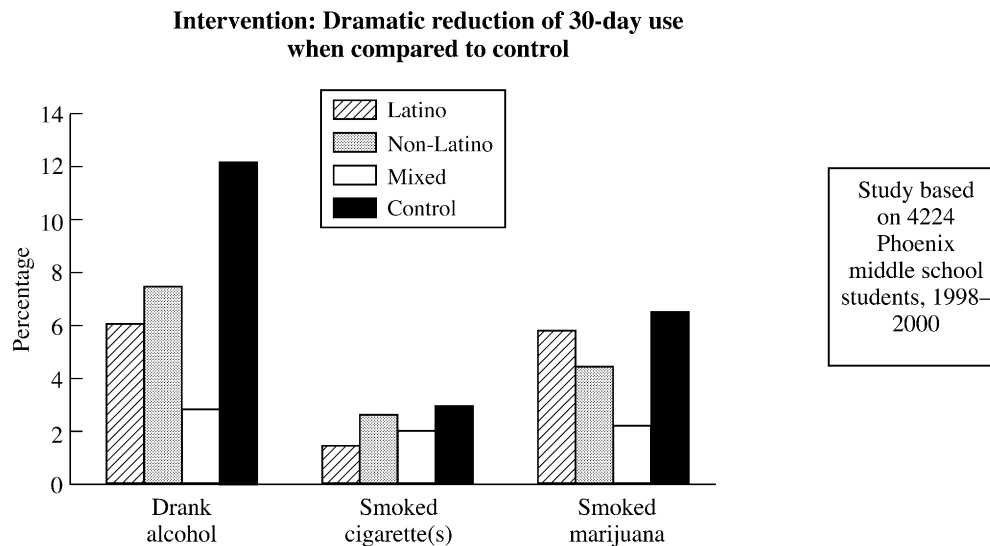


Fig. 2. Effects of interventions on 30-day use of alcohol, cigarettes and marijuana.

weighting of teacher input was important and also emphasized the importance of DRS training to their effectiveness in teaching the curriculum. They appreciated being treated as professionals through adequate training, stipends and professional development credit. Finally, the group generated several ideas to reinforce core resistance strategies that were incorporated in the Booster plan for Year 2.

Boosters

An important aspect of teaching is to ensure that central concepts are reinforced and applied at a later point in student learning. To this end, a Booster series was created and implemented as students moved through Grade 8. Teachers undertook full creative ownership of the Booster effort to reinforce the anti-drug messages of the *REAL* intervention. In August 1999, the research team brought together five teachers who had taught the *keepin' it REAL* curriculum in five separate districts. They generated 12 Boosters spanning individual class activities (e.g. posters), multiple grade level events (e.g. community service activities) and campus-wide projects (e.g. webpage design). Teachers and students, encouraged to design additional Boosters throughout the year

while implementing one Booster each month, created 35 more boosters which were distributed to all participating campuses.

Findings: the DRS experiment

Data indicate that the curriculum was effective on many levels. Students viewed the effects of alcohol and drugs less positively, and there was a decrease in the perception that 'everybody is doing drugs'. Alcohol use by students in the Control group continued to rise (4.9%) considerably while students who received the Multicultural intervention showed only a 2.6% increase in alcohol use in the same time period (see Figure 2). Cigarette use in the Control group increased by 2.5% while the rate for students in the Multicultural group was just 1.6%.

Overall findings indicate that intervention students gained in their ability to resist drugs, demonstrating a 16% decrease in alcohol use compared to a 20% increase in alcohol use for Control students. Moreover, experimental site students showed a less positive attitude towards using drugs after the intervention. Thus, the intervention positively influenced anti-drug norms and

attitudes in addition to lessening use of drugs and alcohol (see Table IV).

Data indicate that the most successful versions of the curriculum were the Mexican/Mexican-American and the Multicultural, with less support for the ethnic-matching hypothesis (i.e. matching student ethnicity with curricular ethnicity). Several factors may have influenced this finding. First, Phoenix is experiencing expansive, diverse growth, adding greater variety to student populations. Second, broad incorporation of Mexican terms, symbols and customs has resulted in an infusion of that culture into 'everyday' life. Finally, all media have expanded programming to include multiple languages and cultures. However, further efforts are needed to explore the significance of ethnic culture and values representations in prevention curricula.

Findings: PAR methodology

Teachers and students provided the impetus for curriculum development. Student influence in (1) the focus on Grade 7, (2) the core information from which strategies were derived, (3) the DRS graphics and (4) the video production could not be overstated. Students served as important sources of information during the pilot studies, the field-testing and the evaluation of the lessons. The 'expert feedback' from students resulted in a powerful, effective prevention tool of 'kids talking to kids' not just about resisting offers, but *how* to resist them.

Teachers, too, contributed essential components to the creation and evaluation of lessons. They gave suggestions about the effectiveness of lessons, learning objectives and appropriateness of materials, as well as creating and evaluating Boosters. Teacher input proved essential to student relevancy, effectiveness from the teachers' perspectives and adaptation of lessons to demands of school schedules. The research team actively sought teacher-practitioners as research partners, giving teachers ownership of the lessons while attending to their professional value and development through stipends and training.

Table IV. Overall findings of the REAL experiment: comparison among culturally grounded versions of the REAL curriculum

	Mexican-American versus control				European-/African-American versus control				Multicultural versus control				Culturally matched versus mismatched			
	T2	T3	T4		T2	T3	T4		T2	T3	T4		T2	T3	T4	
Pro-drug use	→	→	→		→				→				→			
recent alcohol use			→													
recent cigarette use			→													
recent marijuana use			→													
descriptive norms	→	→	→		→	→	→		→	→	→		→	→	→	
positive drug expectancy	→	→	→		→	→	→		→	→	→		→	→	→	
Anti-drug	↑	↑	↑		↑	↑	↑		↑	↑	↑		↑	↑	↑	
use of REAL strategies	↑	↑	↑		↑	↑	↑		↑	↑	↑		↑	↑	↑	
injunctive norms: parent	↑	↑	↑		↑	↑	↑		↑	↑	↑		↑	↑	↑	
injunctive norms: friends	↑	↑	↑		↑	↑	↑		↑	↑	↑		↑	↑	↑	
personal norms	↑	↑	↑		↑	↑	↑		↑	↑	↑		↑	↑	↑	
self efficacy	↑	↑	↑		↑	↑	↑		↑	↑	↑		↑	↑	↑	
personal intentions	↑	↑	↑		↑	↑	↑		↑	↑	↑		↑	↑	↑	

Discussion

Incorporation of the PAR methodology

DRS researchers chose PAR methodology in order to: (1) create a strong program combining the knowledge of researchers and the expertise of community to increase the relevancy of the program to local youth, (2) increase the effectiveness of the program by fostering ownership by teachers and students, (3) allow participants to serve as experts regarding the culture of their communities, and (4) promote a more rigorous evaluation of the intervention. The methodology afforded the opportunity for practitioners to tailor the prevention message for youth, while allowing researchers to ensure that the project remained theory driven and methodologically sound.

Implications

The success of the program implies that the incorporation of PAR also was successful. The methodology proved an effective way to utilize combined researcher and community strengths. Teachers believed they were viewed as experts on the needs and nature of their students, and were treated as professionals. Similarly, middle school students enjoyed contributing to the field-test evaluations in addition to creating the logo and Boosters. The high school students who created the videos reveled in the chance to contribute to a program geared towards younger students in their neighborhoods.

PAR methodology enabled community experts to represent their schools and cultures. Both teachers and students created visual representations of culture by contributing to narratives and scenarios, by validating ideas and representations of students, and by participating in the development process. Because teachers and students were involved in multiple stages of development, they were able to identify the finished curriculum as truly representative of their communities and values. Thus, PAR affected all levels of the creation and implementation process, fostering active participation and the emergence of a definitive sense of ownership.

Limitations

As the debate over definitions of PAR continue, and because members of the community were not involved in all stages of the DRS project design and decision making, there may be questions about whether or not this model of PAR withstands scrutiny (Bernstein *et al.*, 1994; Robertson and Minkler, 1994; Green *et al.*, 2001). Although the DRS project responded to the need for school superintendents to meet the legislative decree for drug prevention, and while students and local agencies indicated a need for drug prevention geared towards middle school youth, the fact remains that DRS researchers initiated the project. They also created the experimental design and the majority of survey items.

While involving the community in all stages of a project might be appropriate to some research aims, in actual practice, 'social roles, community norms, institutional inertia and internalized expectation can constrain people's behavior' [(Wang *et al.*, 1998), p. 84]. DRS researchers were constrained by limitations inherent in working with multiple school systems as 'community' and in working with minors. Given the hierarchical structure of school systems, governing boards, superintendents and principals have the final say in decisions regarding their schools—a structure that may disempower teachers. Teachers may be expected to implement a drug prevention curriculum while having little input. Furthermore, children traditionally have been ignored in the creation of curriculum and researchers often are constrained in the amount of access allowed student participants, as minors—factors influencing power relationships. Yet, researchers must deal with the power structure of the school community, first, before they can incorporate the voices of teachers and students.

Although Israel *et al.* (Israel *et al.*, 1998) identified several challenges (e.g. questions of control) inherent in PAR methodology, disagreements between community members and researchers were exceptionally rare in the PAR model used for DRS. To accomplish the experiment, the university team remained in the power position regarding theoret-

ical foundations, sound methodology and measures of experiment effectiveness, which may have helped avoid conflicts, but also prevented use of a fully inclusive model of community-driven activities at all stages. However, the premise of the research and the attitudes of researchers combined to empower the community—an element essential to PAR validity (Green *et al.*, 2001)—while providing visible support and valuable information to the school community.

The attitude of the research team that the expertise of teachers and students was essential to success was reflected in the conscious use of practitioners, not academic researchers, to create a horizontal working relationship among teachers, students, schools and curriculum developers—to create a non-threatening environment in which teachers and students took ownership of the curriculum. The curriculum developers included recent Master's degree graduates and a teacher trainer from a local high school district. As a result, teachers may have perceived these members of the research team as more equal in status. Also, the developers viewed the teachers as the experts and made that perspective well known. According to Biggs' (Biggs, 1989) consultive role, participants are asked for opinions and consulted by researchers before interventions are made; and, in the collaborative role, researchers and local people work together on projects designed, initiated and managed by researchers. During DRS curriculum development, teachers served as experts from the community while researchers served as 'consultants to the community' in a collaborative process (Robertson and Minkler, 1994).

This paper highlights how PAR was used in the community-based phases of the DRS research—curriculum development and evaluation, implementation, and Boosters. Wang *et al.* (Wang *et al.*, 1998) noted the importance of PAR to maximize the talents of all participants. While DRS researchers contributed to the process by providing academic rigor in methods, evaluation processes and theory, they relied heavily upon the teachers and students as experts on community culture and specific needs. Contributions from researchers and members of

the community were equally important to project success (Bosworth, 1998). In this manner, the program served as a model to demonstrate how PAR can strengthen the practical application of research to community-based prevention efforts, resulting in a successful partnership in which social change could occur. Recognizing that other sites may not have the technical capabilities noted here, the PAR models used to create the DRS curriculum may be transferable to other settings. Although the DRS curriculum remains specific to the environment/culture in which it was developed, many cultural elements are common throughout the Southwestern US.

Suggestions for future research

Inclusionary methodologies, especially PAR models, show promise for prevention curricula development. Although DRS is a single case, the PAR model employed could be replicated because the emphasis centers on attitudes and process rather than control of environmental elements. Through careful planning of phases, participants could be recruited for specific roles and functions beginning early in the process. For example, using the protocol shown in Table II, a research design could incorporate rigorous methodology aligned with theoretical constructs in addition to a systematic evaluation of both process and product.

To improve PAR applications, researchers should explore expanded participation of diverse community representatives. Earlier involvement might enhance decision making, especially regarding appropriate interventions for students and creation of strategies for gathering community input. Active community participation in decision making, although challenging, might result in more effective programming. Community participants might be involved in formulating research questions, identifying interest groups and developing needs assessment instruments.

Researchers must respond to the need for data about implementation processes that benefit schools beyond that discovered during DRS (Bosworth, 1998). As DRS data continue to be rigorously evaluated, the promising results under-

score the importance of active collaboration to the success of the research effort. The evaluative data show that using a systematic process to create and evaluate the curriculum through the eyes of teachers and students while maintaining a theory-driven research design allowed DRS researchers to integrate PAR methodology successfully—a process these authors endorse and recommend.

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