Theory Development and Evaluation of Project WIN:
A Violence Reduction Program for Early Adolescents

Laura Roberts
Roberts Educational Consulting Services
Lehigh University
George White
Lehigh University
Peter Yeomans
Drexel University

There is a need for an effective violence reduction program for early adolescents in schools. Social psychologists have had success teaching adolescents integrative negotiation strategies that help them to resolve potentially violent conflicts. The caveat is that these strategies are effective only in cooperative social contexts and backfire in competitive social contexts. To develop an effective violence reduction program, we must not only teach young people skills of integrated negotiation; we must also present complementary strategies to help them transform competitive social contexts into cooperative social contexts. The purpose of this study was to present a violence reduction program, entitled Project WIN (Working out Integrated Negotiations), which accomplished both of these goals. The target group was fifth-graders in a low-income, urban community. Plans for further evaluation of Project WIN and greater investment of educators and researchers in the behavioral technology of violence reduction are discussed.

Keywords: *conflict resolution; social interdependence theory; program evaluation; low-income, urban population; nonviolent/cooperative classroom*

INTRODUCTION

Purpose of Study

This research examined a violence reduction program for early adolescents. We had three purposes for the current study. First, we sought to highlight social interdependence theory as the common thread linking violence reduction interventions. Second, we aimed to extend social interdependence theory, showing that it can be more efficiently applied by developing in young people an aptitude entitled "transforming power" that enables them to change a competitive social context to a cooperative one. Third, we sought to present and evaluate a new violence reduction program based on the expanded version of social interdependence theory.

Social Interdependence Theory

Social interdependence theory posits that conflict is a natural part of all social relationships. In addition, the theory states that in cooperative settings, conflicts are typically resolved using integrated negotiation strategies, in which both parties work toward mutual gain, and in competitive settings, conflicts are typically resolved using distributive strategies, in which each person seeks to maximize his or her own gain (Deutsch, 1949, 1962, 1973; Johnson, 1970, 1974; Johnson & Johnson, 1979, 1989). Problems tend to arise when the strategies and contexts are incongruent. For example, in a competitive situation, when one person tries to apply integrated negotiations, that person is likely to be exploited. If one is willing to cooperate through negotiation, one becomes vulnerable to an opponent bent on winning. A competitive opponent can exploit an unwary opponent by failing to deliver on promises and in other ways. Likewise, in a cooperative situation, when one person tries to apply distributive strategies, he or she may be ostracized for violating the norms of the group.

According to Johnson and Johnson (1989, 1994), most schools are dominated not by cooperation but instead by competition. Moreover, several studies show that people have a bias to apply distributive strategies during conflict (Johnson, 1967), and this tendency is found among early adolescents in school (Johnson, Johnson, Dudley, Mitchell, & Fredrickson, 1997). Thus, it appears that the social context and type of conflict resolution strategies in schools are congruent. This does not mean, however, that the systems function well. These types of competitive systems governed by norms of conflict resolution by distributive strategies are likely to devolve into systems in

which bullying, fighting, and violence are common (Deutsch, 1949, 1962, 1973).

There is a need to transform both the social context in schools as well as the type of strategies used to resolve conflicts. Although researchers have successfully taught new conflict resolution strategies—namely, integrated negotiation skills—they have not paid enough attention to strategies for transforming the competitive social context to a cooperative one. This study is an evaluation of a new program designed to achieve both goals—that is, teach integrated negotiations as well as teach students to transform a competitive social context to a cooperative one.

Violence Reduction Programs

Because this is such a vast area of study, we will confine our analysis to two models, the conflict resolution-critical thinking (CRCT) curricula and peer mediation training models. We chose to focus on these models because they have shown positive results in prior research. According to Johnson and Johnson (1996), these types of programs have led to reductions in discipline problems, violence referrals, suspensions, and detentions. We contend, however, that they could be even more effective.

Two well-known examples from the CRCT model are Mark Greenberg's PATHS (Promoting Alternative Thinking Strategies) program (Greenberg, Kusche, & Mihalic, 1998) and the Violence Prevention Curriculum for Adolescents by Deborah Prothrow-Stith (1991, 1998) at the Harvard School of Public Health. Both programs do a thorough job teaching negotiation skills. These programs, however, only superficially address skills to transform a competitive environment to a cooperative one.

The strongest program of the peer mediation type model is Teaching Students to Be Peacemakers by Johnson and Johnson (1995a), in which teachers train selected students to become mediators for their classmates. The mediators then lead a pair of disputants through the steps of negotiation to settle a dispute. With regard to specific activities to transform the classroom environment into a cooperative one, this model also appears to be lacking.

The next plank researchers need to hammer into place, then, is a way to transform a competitive classroom to a cooperative classroom. This is the contribution that Project WIN adds to prior programs. Project WIN helps teachers and students create cooperative classrooms by developing an aptitude called transforming power. We assert this ability will lead to cooperative attitudes toward classmates and cooperative attitudes toward conflict itself. More specifically, we predicted cooperative attitudes toward classmates would be characterized by more liking, more trust, and more teamwork and

that cooperative attitudes toward conflict would be marked by reduced anger and hostility, a calm focus on problem solving, a willingness to consider alternatives to violence, and a belief that win-win outcomes are possible.

Project WIN's Pedagogy

The pedagogy of Project WIN was experiential. Students participated in whole-class and small-group discussions, brainstorming exercises, role-plays, group problem solving, and cooperative games. The teacher often used storytelling to explain a concept, and students used stories to demonstrate their understanding of the concepts.

Project WIN's Curriculum Themes

The two curriculum themes of Project WIN were (a) lessons to transform a competitive social context to a cooperative one and (b) lessons to teach integrative negotiation strategies.

Transformation from competition to cooperation. To explain how we transformed a competitive social context to a cooperative one, it is necessary to first describe a theoretical aptitude called transforming power and show how we sought to develop this capacity in young people. According to Apsey (1960), transforming power allows people to transform violent, competitive, destructive situations into constructive and cooperative environments. We contend that transforming power is an aptitude that can be taught and developed in young people through a series of experiential classroom exercises and through lessons on values clarification. Detailed descriptions of several lessons are provided in the Method section that will provide a window into a middle-school classroom.

At each session, we addressed the values and attitudes of transforming power implicitly. About halfway through the program, we presented a lesson that defined the construct explicitly as an ability that each child possessed that they could develop by adopting certain values and attitudes. To this end, we presented several values clarification exercises. We distributed copies of the mandala shown in Figure 1, which contains the guides to developing transforming power. The guides are "respect for self," "caring for others," "think before reacting," "seek a non-violent solution," and "expect the best." Each student selected the guide most interesting to him or her and commented on a time when he or she experienced this guide. In subsequent lessons, we presented corresponding exercises to reinforce each guide.

Figure 1: Guides to transforming power.

Cooperative attitudes toward classmates. When students have more cooperative attitudes toward each other, there is less fighting in the classroom (Johnson & Johnson, 1989). Thus, drawing from guides 1 and 2 on Figure 1, "respect for self" and "caring for others," we designed exercises to nurture more cooperative attitudes toward classmates. Selected exercises are described in detail in the Method section.

We predicted that these cooperative attitudes would manifest as attitudes of increased liking, trust, and teamwork. Several social psychologists have demonstrated that these three qualities—liking, trust, and teamwork—are key features for groups in cooperative social contexts (Deutsch, 1962, 1973; Johnson & Johnson, 1989). In their seminal work *Turning Points: Preparing American Youth for the 21st Century*, the Carnegie Council on Adolescent Development (1989) asserted, "School should be a place where close, trust-

ing relationships with adults and peers create a climate for personal growth and intellectual development" (p. 37). In addition, Johnson and Johnson (1995b) claimed that the opposite type of climate, one characterized by social alienation, is a risk factor for violence among young people.

Cooperative attitudes toward conflict. We focused on the following cooperative attitudes toward conflict: (a) a belief in the value of anger control during conflict, (b) a belief that nonviolent solutions to conflict exist, and (c) a belief that win-win outcomes are possible in which both disputants come out ahead.

We drew from guide number three, "think before reacting," to inspire students to develop anger control, calm down strategies, and impulse control. Young people who learn to control angry impulses engage in calm problem solving during conflict and are less likely to resort to violence (Goleman, 1995; Heydenberk & Heydenberk, 2000; McKay, Rodgers, & McKay, 1989).

We used several concrete metaphors to provide new ways to talk and think about the abstract elements of anger. Specifically, the teacher presented the "conflict escalator" and an "anger thermometer" (Kreidler, 1997). The teacher used diagrams when facilitating these discussions, explaining that anger moves people up the conflict escalator. We also taught specific calm-down strategies and how to come down the conflict escalator and cool down the anger thermometer. In early adolescence, as students' formal thinking skills emerge, concrete metaphors and diagrams provide the scaffolding needed to support more mature understanding and discussions (Vygotsky, 1986). Our purpose was to promote objectivity toward conflicts by nurturing a calm focus on solving a problem rather than targeting an opponent with an angry outburst.

Guide number four, "ask for a nonviolent solution" and the corresponding exercises encouraged students to use alternative conflict resolution strategies, such as surprise, creativity, and humor. In a competitive classroom, students tend to polarize quickly to an "I am right; you are wrong," attitude during conflict, which can escalate to a fight if the disputants are angry (Kohn, 1986). In contrast, a cooperative classroom nurtures creative thinking, consideration of alternatives, and allows more freedom to explore divergent thoughts and new possibilities to resolving conflict, possibilities that go beyond the common method of winner versus loser (Berman, 1991; Johnson & Johnson, 1995a).

Finally, for guide number five, "expect the best," activities were designed to inspire students to become more optimistic and to consider the possibility of win-win solutions, in which both people come out ahead. Win-win is a

new concept to most students because they have been ingrained with the idea that conflict leads to one person defeating the other in a win-lose scenario (Stevahn, Johnson, Johnson, & Real, 1996). Johnson and Johnson (1995a) showed that there was less fighting and more cooperation in classrooms where students learned to choose win-win solutions to conflicts. In addition, students with optimistic attitudes were able to remain objective during conflict by focusing on problem solving rather than attacking their opponent (Snyder, 1994).

Teaching integrative negotiation strategies. In the first session, we taught that conflict is a normal part of relationships, and although conflict is often considered negatively, the energy from conflicts could be transformed into constructive solutions to problems. We taught the following negotiation skills: (a) discerning one's own feelings and needs in a conflict situation and the reasons underlying one's feelings and needs, (b) listening and perspective taking to discern the feelings, needs, and underlying reasons of one's opponent, (c) brainstorming alternative solutions, (d) analysis to identify a solution that meets both parties' needs, and (e) the steps of mediation. Researchers have been successful teaching all of these negotiation skills to adolescents (Johnson & Johnson, 1995a; Johnson, Johnson, Dudley, & Magnuson, 1995). Moreover, Johnson and his colleagues found that months after training ended, most students continued to use the negotiation skills on the playground, in the halls, and in the cafeteria (Johnson, Johnson, Dudley, & Acikgoz, 1994) and that these skills reduced discipline problems at school (Johnson, Johnson, & Dudley, 1992).

The lessons on integrated negotiation skills for Project WIN draw from William Kreidler's (1997) *Conflict Resolution in the Middle School*, a manual written by the Education Committee of the Alternatives to Violence Project (AVP; 1986), a program targeting inner-city adolescents by teachers at Woodrock, Inc. (2002), a nonprofit organization in Philadelphia, as well as several lessons written by the first author.

Our first goal in the program was to transform the classroom from a competitive context to a cooperative context by helping students develop an aptitude called transforming power. We expected that students who developed this aptitude would exhibit (a) more cooperative attitudes toward classmates and (b) more cooperative attitudes toward conflict itself. Our second goal was to teach specific skills for integrated negotiation. Based on social interdependence theory, we believed that the combination of a cooperative social context and students skilled in integrated negotiation strategies would result in a higher functioning and more productive classroom.

METHOD

Sample

This study was conducted in the most economically disadvantaged school district in Pennsylvania. Forty percent of the children younger than the age of 18 in this community live below the poverty line (twice the national rate). The median family income in the community is about $26,000 (J. DiSabatino, personal communication, August 2002). The target school consisted of grades K through 8 and operated a "school-within-a-school" middle-level model. The school has a population of approximately 550 students, consisting of primarily African Americans (78%), with 20% Caucasians and 2% Hispanics. With regard to the fifth-grade classrooms that were selected for the implementation and evaluation of Project WIN, the majority of the sample was female (64%), African American (75%), and receiving free or reduced-cost lunch (78%). Nineteen percent of the students in the selected class were Caucasian and 6% were Hispanic. The free or reduced-cost lunch variable was a proxy assessment for economic status. Those students with the greatest financial need are enrolled in the free and reduced-cost lunch program. None of the demographic characteristics differed for the treatment group versus the control group. The group differences were examined with phi coefficients and the results were as follows: gender, phi = $-.05$, $p < .77$; race, phi = $.04$, $p < .97$; and economic status, phi = $.11$, $p < .82$.

Procedure

All fifth-graders in a low-income, urban, K through 8 school were recruited for the evaluation study. Informed written consent was obtained from all students and their parents. Students were randomly assigned to two classes at the beginning of the school year in the process of creating two separate homeroom classes. One class was designated as the treatment group ($n = 19$) and the other was the control group ($n = 15$).

In September and October 2002, all students received the pretraining assessments, which consisted of a 15-minute, one-on-one interview and a paper-and-pencil questionnaire. All interviews were conducted by the principal investigator or a research associate. We are preparing the interview results to be submitted for a separate publication. The paper-and-pencil survey, the Cooperative Attitudes Toward Classmates and Toward Conflict Questionnaire, was administered in the classrooms. To control for possible reading difficulties, the principal investigator administered the surveys by reading each item aloud in each classroom.

Next, the 17-session conflict transformation program, Project WIN, was taught to the treatment group. Each session was 45 minutes to 1 hour long and took place in the classroom just after the lunch period. The researcher observed and documented each class session with a transcript. These transcripts were used to produce the excerpts in the qualitative description of the program.

At the end of the training in December, posttraining assessments were conducted with the same procedure used at pretraining. In addition, the treatment group received a 10-item, true-or-false quiz to check for mastery of the integrated negotiation skills.

Qualitative Description of Program

The teacher for the program was a trainer for Woodrock, Inc., a Philadelphia-based nonprofit organization with a mission to promote interracial harmony. He received training in the Curriculum for Conflict Resolution and Peaceable Schools at Lesley College and through the Alternatives to Violence Program, an international, nonprofit organization with a mission to teach nonviolent strategies to resolve conflicts.

A typical lesson was structured as follows: The teacher started with a review of the prior day's lesson. Next, he previewed the current day's agenda. Then he facilitated a brainstorming session to define important terms for the current day's agenda and conducted a participatory exercise to reinforce the lesson for the day. The participatory exercises consisted of role-plays, brainstorming sessions, and cooperative games.

The following excerpts of the program transcript were selected to provide examples of lessons designed to transform a competitive context to a cooperative one. This is the novel aspect of Project WIN. We did not include descriptions of the lessons for teaching integrated negotiation skills because these lessons have been described elsewhere (AVP, 1986; Kreidler, 1997; Woodrock, Inc., 2002).

Lessons to Develop Cooperative Attitudes Toward Classmates

Activity to increase liking. Sessions often started with a *gathering* in which the teacher posed a query and each student gave a quick and brief response. For example, at the third session, the gathering query was, "What new or good thing is happening in your life?" Students gave responses such as "I got a new DVD and my niece, Kata, turned 4"; "I can't think of anything,

except we're getting two dogs"; "I got an A on a spelling test and I went on a zip line."

The gatherings helped break the ice at the beginning of the lesson and gave students a chance to know each other better. Research shows even this kind of simple sharing of personal information seems to stimulate liking (Insko & Wilson, 1977), perhaps because it provides an opportunity to explore similarities and for individuals to perceive themselves as a social unit (Arkin & Burger, 1980).

Activity to increase trust. We asked students to brainstorm some classroom ground rules during the first session. One of the ground rules was no put-downs. The teacher asked the students to define what they meant by the word "put-downs." Some examples of their responses are as follows: "When somebody says you can't do something," "If someone comes over and starts picking at you and says something about your grandma."

Two additional ground rules were confidentiality and no gossiping. The teacher pointed out that students may discuss conflicts they observed or experienced, but they should not reveal identities of the people involved. Nor were students allowed to pass these stories along to others outside of the class. The purpose was to foster trust by allowing students to speak openly about conflict with the assurance that others would keep their experiences and concerns in confidence.

Activities to increase teamwork. The program included a series of cooperative games in which students worked as a team to achieve a common goal. Social psychologists have demonstrated that these kinds of activities promote harmony and cooperation in groups (Blake & Mouton, 1979), specifically among adolescents (Sherif, 1966). Moreover, studies have shown that people who work successfully together on cooperative activities get along better and grow to like each other better (Worchel & Norvell, 1980). These results were observed among early adolescents, in particular (Aronson, 1988).

An example of a cooperative game was an exercise in which students joined hands in a circle to see how fast they could send a hand squeeze around the circle. Students engaged in several trials to achieve their goal. The students completed the task in 20 seconds the first time. The teacher asked whether they could complete the task in 15 seconds. The students shouted, "Yes!" with enthusiasm. The teacher then asked if they could complete the task in less than 10 seconds. When the students achieved this goal, they

clapped and cheered. It appeared that a successful team experience drew the students closer together and promoted cooperation.

Activities to Increase Cooperative Attitudes Toward Conflict

Activity to decrease anger. The teacher conducted a brainstorming/web charting exercise in which he asked the question, "What are some ways you can calm down [when someone gets you upset]?" Students began volunteering their ideas, and the teacher wrote them on the board, organizing them into a web chart, in which related ideas were connected by "webs" or lines. The teacher created categories of distraction strategies and physical relaxation strategies. These are two main calming-down strategies psychologists have identified (Kreidler, 1997). The kinds of distraction strategies students volunteered were, "Count to 10. Take a deep breath," "Watch movies," "Sit and think," "I just be quiet, don't say nothing back," and "Think about something positive." The physical relaxation strategies students mentioned were, "Miss Klein taught us to rub our temples," "Do muscle tightening and release," "Take a walk," and "Punch a pillow." One student also offered the suggestion "Talk to a parent or counselor." By using brainstorming, the teacher empowered students by asking them to share the knowledge they already possessed on this topic and by allowing them to teach one another.

Lessons to learn nonviolent alternatives to fighting. We taught the students that conflict is a natural part of social relationships, but conflicts do not necessarily lead to violence. We taught them that nonviolent alternatives are possible. For example, the teacher offered creativity, surprise, and humor as nonviolent alternatives to fighting. He gave an example from his own life of a time when he surprised someone by reacting with kindness instead of hostility when provoked. One student then described a story in which his grandmother warded off two would-be robbers by surprising them with kindness. He explained, "One time [two guys] tried to rob my grandma, she went in the house and got cookies, put one in each guy's mouth, and gave each one five dollars. So they let her alone." We do not know whether this was a true story or a fictional one, but we believe the student understood the point of the lesson.

Lesson to learn about win-win outcomes. We presented a hypothetical scenario described by Kreidler (1997) in which two friends, Abe and Ricco, had a conflict. On a particular Friday night, Abe wanted Ricco to go with him

to a dance, but Ricco had to babysit his cousin and wanted Abe to stay and keep him company. (The names of the students have been changed to protect confidentiality.)

The teacher asked, "Is there a solution in which both people 'win' in this scenario?"

Melinda said, "Maybe they could have a little party where they're supposed to babysit."

Asha added, "That's a win-win solution."

Justin suggested, "They could go to the dance and find another babysitter for the baby."

Vella said, "Abe and Ricco could stay together and have their own dance."

The teacher then asked, "In real life, are people usually trying to get win-lose or win-win solutions?"

Oscar answered, "People are competitive, like our president. He trying [*sic*] to go and win the war. And like in an election, people always trying to beat somebody else out. That's why most people are trying to find win-lose solutions."

Some of the lessons aimed to develop cooperative attitudes toward classmates and some aimed to develop cooperative attitudes toward conflict itself. There was a natural synergy in the development of these two kinds of attitudes. We aimed to help students develop objectivity during conflict that allowed for integrative strategies (i.e., strategies in which both people come out ahead instead of having a winner and a loser). The goal was to identify and solve a problem, not to defeat or humiliate an opponent.

Quantitative Description and Evaluation of Project WIN

In the current study, we employed a pretest, posttest control group design. For the first goal, "to transform the classroom context from a competitive to a cooperative one by developing transforming power abilities," we designed an instrument to measure changes in cooperative attitudes toward classmates and toward conflict itself. Relative to the control group, it was expected that the treatment group would show gains on cooperative attitudes toward classmates and gains on cooperative attitudes toward conflict. We also administered a set of related interview questions at pretest and posttest, which we are preparing for a separate article.

For the second goal, "to teach students integrative negotiation skills," we administered an objective quiz at the end of the program. It was asserted that a score of 80% or higher on the quiz would indicate a student had mastered the integrative negotiation skill content of the program.

Instruments

Cooperative attitudes toward classmates and toward conflict. Cooperative attitudes toward classmates were measured with 12 items and cooperative attitudes toward conflict were measured with 7 items. Both sets of items had Likert-type responses ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). These items are listed in Table 1. Some were reverse scored so that higher scores represent more adaptive responses on all items.

Separate items were designed to measure each of the three hypothesized dimensions of cooperative attitudes toward classmates, which were liking, trust, and teamwork. A high score on liking indicated that a student felt close to other students in the class and would like to be friends with them. A high score on the trust dimension indicated that a student felt safe with the other students in the class, believed the other students were honest, and felt that his or her confidentiality would be respected. A high score on the teamwork dimension indicated that a student believed he or she could count on other students in the class when help was needed and vice versa.

Initially, the questionnaire contained eight items that measured cooperative attitudes toward conflict, but it was found through interviewing that one of the items was ambiguous (Item 1: I try to avoid conflicts). Therefore, this item was dropped from the scale. Items were designed to measure whether students thought (a) it was important to control anger and stay calm during conflict and (b) it was possible to achieve a nonviolent, win-win outcome to a conflict.

Content validity of the items was examined with a modified Delphi procedure in which they were sent to four experts in the field of conflict resolution training with the population of interest (Cline, 2000). These experts had in-depth knowledge of the principles of transforming power. Each respondent reviewed the items and commented on the appropriateness in terms of content and language. The items were revised accordingly and sent out to the expert panel a second time. After three sets of reviews and revisions were completed, there was consensus among the four expert reviewers as to the content validity of the questionnaire to measure cooperative attitudes among early adolescents. Finally, a readability analysis was conducted to insure the reading level of the instrument was appropriate for the target population (Dale & Chall, 1948; Flesch, 1949).

Reliability was assessed with Cronbach's alpha coefficients. For the cooperative attitudes toward classmates scale, the alpha coefficients were .72 and .85 at pretraining and posttraining, respectively. The alpha coefficients for the subscales at pretraining were .39, .53, and .69 for liking, trust, and team-

TABLE 1:   Items for Cooperative Attitudes Scales and Subscales

Cooperative Attitudes Toward Classmates

Liking	I would like to be friends with the kids in this class.
	The kids in this class feel like family.
	I feel like an outsider in this class.
	I dislike the kids in this class.
Trust	I feel safe in this class.
	If I tell a secret in this class, it will stay secret.
	The kids in this class are honest.
	The kids in this class want to hurt me.
Teamwork	The kids in this class can count on me for help.
	When I need help, I can count on the kids in this class.
	The kids in this class will let me down when I need help.
	If kids in this class need help, I will let them down.

Cooperative Attitudes Toward Conflict

When I have a conflict with someone, I want to win and I want the other person to
   lose.
When I have a conflict with someone, I try to find the problem that caused the
   conflict.
At the end of a conflict, one person is the winner and one person is the loser.
People who stay calm during a conflict can stay out of a fight.
People who stay calm during a conflict can usually solve the problem that caused
   the conflict.
At the end of a conflict, both people can be winners.
If someone gets smart with me, we end up in a fight.

work, respectively. The corresponding alpha coefficients at posttraining were .69, .59, and .63. All of the alpha coefficients on the posttraining scales were deemed acceptable for an instrument of this type. The one exception was the trust subscale, which had a Cronbach's alpha of .59. By deleting item 4, the researcher found that the alpha for this subscale increased to .70. Thus, item 4 was deleted from the trust subscale. The reliability for liking was low at pretraining. To determine whether the low reliability impacted the conclusions, additional tests were conducted for each item in this subscale. It was found that the low reliability did not affect the conclusions.

The Cronbach's alpha coefficient for the cooperative attitudes toward conflict scale at pretraining was .74 and at posttraining, .76. These reliability coefficients show a high degree of interitem consistency and were deemed acceptable for an instrument of this type.

Quiz to Assess Knowledge of Integrated Negotiation Skills

A 10-item, true-and-false quiz was designed to assess knowledge of the integrated negotiation skills taught in Project WIN. The quiz was administered to the treatment group only at posttraining to test whether students understood and retained the basic skill concepts of the course. Some of the questions tested recall on definitions of skills, and some required students to identify examples of skills. The former type of question addresses retention and the latter type addresses application and understanding. A score of 80% or better was determined a priori to be an indication of mastery. The principal investigator administered the quiz in the classroom by reading each item aloud as the students followed along and marked their answers.

RESULTS

Cooperative Attitudes Toward Classmates and Toward Conflict

Two scales and three subscales were computed. One scale was the mean of the 12 items designed to measure cooperative attitudes toward classmates. Within this scale, three subscale means were computed with the items for liking, trust, and teamwork. The second scale was the mean of the 7 items designed to measure cooperative attitudes toward conflict.

Table 2 provides mean scores for the treatment and control groups at pretraining and posttraining. The general pattern was that means were high (greater than 3 on a scale from 1 to 4) for the treatment group and control group at pretraining. Means then tended to move even higher for the treatment group but dropped down for the control group at posttraining. The exception to this general pattern was the trust subscale, in which means tended to be in the moderate range (between 2 and 3) at pretraining for both treatment and control groups and showed little change at posttraining.

The researchers conducted a series of ANCOVAs with the posttraining scores as the dependent variables, the pretraining scores as the covariates, and a coded vector representing treatment group versus control group as the independent variable. This analysis allowed us to determine whether the patterns of change from pretraining to posttraining differed for the treatment group versus the control group. The results of these ANCOVAs are given in Table 3. Some of these tests showed unequal error variances across groups, but the deviations were not large. Moreover, a visual inspection of the scatter plot of the standardized residuals and the predicted values did not show a

TABLE 2:   Change on Cooperative Attitudes Toward Classmates and Toward Conflict Means (*SD*s) for Treatment and Control Group from Pretraining to Posttraining

		Pretraining	*Posttraining*
Cooperative Attitudes Toward Classmates Scale			
	Treatment[a]	3.03 (.48)	3.17 (.51)
	Control[b]	3.08 (.34)	2.70 (.69)
Cooperative Attitudes Toward Classmates Subscales			
Liking	Treatment	3.13 (.57)	3.37 (.53)
	Control	3.23 (.46)	2.73 (.78)
Trust	Treatment	2.76 (.65)	2.72 (.62)
	Control	2.65 (.57)	2.37 (.84)
Teamwork	Treatment	3.30 (.66)	3.47 (.59)
	Control	3.42 (.45)	3.03(.77)
Cooperative Attitudes Toward Conflict Scale			
	Treatment	3.02 (.71)	3.29 (.60)
	Control	3.11 (.52)	2.87 (.72)

a. *n* = 19.
b. *n* = 15.

strong pattern. Thus, it is safe to infer that the unequal error variances did not compromise the validity of the results.

Consider first the patterns of change for the overall mean of the cooperative attitudes toward classmates. An examination of means on Table 2 revealed a positive change for the treatment group and a decline for the control group. The ANCOVA showed that this differential pattern was significant, and the eta statistic indicated that 17% of the variance in the change could be attributed to the effect of the treatment. See Figure 2 for a graphic display of this effect.

Analyses by subscale showed the strongest effects were linked to the liking subscale. The treatment accounted for 24% of the variation in change from pretraining to posttraining for the liking subscale and 12% of the variation in change for the teamwork subscale. The effects for the trust subscale did not differ for the treatment group versus the control group. We concluded that the treatment group exhibited greater gains than the control group on cooperative attitudes toward classmates in general and specifically, on liking and teamwork. Based on the experimental nature of the research design, we also concluded that these group differences were likely due to the positive effect of Project WIN.

TABLE 3:   Analysis of Covariance for Change in Cooperative Attitudes as a Function of Group

Source		df	F	Eta
Cooperative Attitudes Toward Classmates				
	Group	1	6.42*	.17
	Error	31	(.32)	
Subscales for Cooperative Attitudes Toward Classmates				
Liking	Group	1	9.84**	.24
	Error	31	(.39)	
Trust	Group	1	1.70	.05
	Error	31	(.51)	
Teamwork	Group	1	4.29*	.12
	Error	31	(.44)	
Cooperative Attitudes Toward Conflict				
	Group	1	4.79*	.13
	Error	31	(.37)	

NOTE: $n = 34$. Values enclosed in parentheses represent mean square errors.
*$p < .05$. **$p < .005$.

The results for cooperative attitudes toward conflict revealed a significant pattern consistent with that observed for cooperative attitudes toward classmates. Here again, the treatment group showed gains and the control group showed declines. This pattern is also given on Figure 2. Thirteen percent of the variation in change on cooperative attitudes toward conflict was attributed to the effects of the program.

Qualitative Data

Students were asked to keep a conflict journal to record conflicts that they observed during the school day. Sometimes these were written accounts and sometimes students reported these events to the researcher orally.

The results of the questionnaires suggested a cultural change toward more cooperation among students in the treatment group. Vella, one of the Project WIN students, reported the following anecdote to the researcher, reinforcing this perception.

One afternoon in the cafeteria, Kindra and Asha began to argue. The argument grew louder and the girls started going at each other as students gathered around. Vella shouted, "Kindra, give her an I message!" Later, Vella reported, "Before Project WIN, students would try to get [Kindra and Asha] in a fight, but when I told them to use an I message, other students started shouting to use their Project WIN skills."
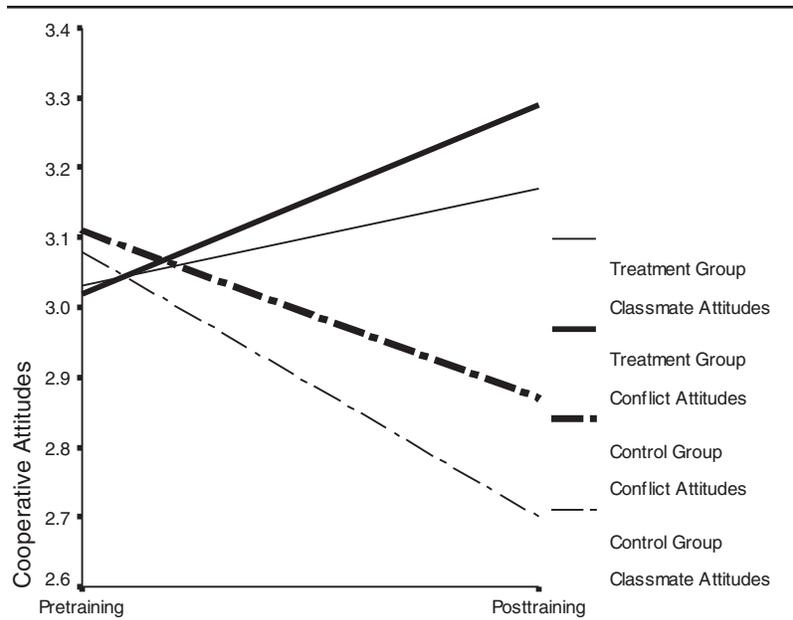
Figure 2: Differential patterns of change for treatment group versus control group on cooperative attitudes toward classmates and toward conflict.

According to the teacher, Mrs. Dillon, the girls kept going at each other. A few moments later, Mrs. Dillon stepped in and pulled them apart. Later, the teacher sat with Kindra to help her talk about the incident. "I wanted to give an I message, but I was just too angry, Mrs. Dillon," she explained.

In middle school, young adolescents struggle as they learn to control their emotions, but by teaching the lessons on transforming power, we had effectively transformed the culture surrounding the conflict between Kindra and Asha.

Results of the Quiz on Integrative Negotiation Skills

The 20 students in the treatment group who were present on the day of testing had a mean score of 89.5 on the quiz on integrative negotiation skills (*SD* = 12.34). A large majority (85%) demonstrated mastery of the course content as indicated by a score of 80% correct or better. The three students who achieved scores lower than mastery level had missed several classes due to absences. Thus, it is possible that missed classes, rather than lack of understanding or retention, explain their lower scores. In general, it was concluded

that students understood the material and at the time of posttraining had retained the information learned in the course.

DISCUSSION AND CONCLUSIONS

The important themes of violence reduction technology have become clearer as a result of this intervention and evaluation. It is clear that the social interdependence theory (Deutsch, 1949, 1962, 1973; Johnson & Johnson, 1989) provides researchers with a strong, clear, logical structure on which to base future research in violence reduction interventions. Based on this theory, then, we contend that an effective violence reduction program must (a) teach young people integrated negotiation skills and (b) must also teach young people how to transform a competitive classroom context to a cooperative one.

This research and other studies show that young people can learn integrated negotiation strategies (Johnson & Johnson, 1995a; Johnson et al., 1995). The part of the violence reduction prescription that is less understood is how to transform a competitive context to a cooperative one. This is especially challenging in a classroom embedded in a larger social context that is highly competitive, one in which the concept of winning is synonymous with defeating one's enemy, one in which violence is a primary tool associated with power and problem solving. For example, one of the students in the class asked, "Why is it that whenever we have a problem with violence in our neighborhood, it seems like the only way to stop it is when the cops come in and threaten more violence? This is confusing." The challenge of making a social and ultimately a cultural transformation toward greater cooperation is confusing and perhaps overwhelming to young people.

Experts in the field of violence reduction recognize the need to transform competitive social contexts to more cooperative social contexts (Deutsch, 1949, 1962, 1973; Greenberg et al., 1998; Heydenberk & Heydenberk, 2000; Johnson & Johnson, 1989, 1995a; Prothrow-Stith, 1991). There is a need, however, to come together in our approach, to figure out how to achieve the goal of creating cooperative contexts. The work of Greenberg and his colleagues (1998) and the work of the Johnsons (1989, 1995a) and Prothrow-Stith (1991) create cooperative norms within the classroom in which they are taught. Our contention is that the young people in these nurturing, cooperative classroom environments will eventually move into a culture defined by competitive norms and the skills for survival in a cooperative context may no longer be effective. The unique contribution of Project WIN is that by teaching young people that they possess transforming power within themselves,

we provide them with the ability to transform any social context to become more cooperative. In future work, we hope to teach young people to apply these skills and abilities outside the classroom in their homes and neighborhoods.

With regard to cooperative attitudes toward classmates, it is concluded that Project WIN is effective at increasing students' liking each other and working together as a team. Although the results do not show an effect for increasing trust, we will continue to work to develop lessons to impact this dimension of cooperation as well. There may be a delayed effect that emerges along these lines. If students experience cooperation in the classroom over a period of several months and experience additional successful team experiences, perhaps an increased sense of trust will emerge. This hypothesis will be examined during a series of delayed posttests that will take place several months posttraining.

Considering the second goal, that of increasing cooperative attitudes toward conflict, again we find Project WIN is effective. Students in the treatment group are more aware of the importance of anger control during conflict and are more likely to consider conflict resolution to be a problem-solving process.

When we consider the goal of increasing students' knowledge of integrated negotiation skills, the conclusion is again positive. Most of the students demonstrate a level of mastery, indicated by a score of 80% or better on the posttraining quiz. One of the limitations of this assessment technique, however, was that the quiz by itself only tests students' knowledge of the skills. It does not test whether students can perform the skills, nor does it test whether students will perform the skills in a natural setting. In future evaluations of Project WIN, we intend to expand the assessment procedures for this goal to include observations to examine transfer of skills to natural settings.

In future research, we plan to test whether the success of Project WIN translates into fewer fighting incidents and fewer disciplinary problems in the classroom. A study of prison inmates by Walrath (2002) demonstrated significant and substantial declines in disciplinary problems as a result of a program similar to Project WIN, entitled the Alternatives to Violence Program (AVP). Like Project WIN, AVP teaches people how to transform a competitive social context to a cooperative one. One cannot conclude, however, that the results from a prison study will generalize to a sample of adolescents in school. More research is needed to determine whether Project WIN leads to decreased violence at school and whether it has an effect on school discipline.

An unexpected finding is the increase in competitive attitudes for the control group. Perhaps increased competition leads to increased fighting and

bullying. If true, this result would be consistent with research showing increases in fighting and bullying at the middle-school level among students who have not received training in violence reduction (Centers for Disease Control and Prevention, 1990; Oregon School Boards Association, 2001).

The results of this study generalize to other middle-school classrooms that are similar to the study sample on key demographic variables, such as race, urbanicity, and socioeconomic status. As young people move from fifth to eighth grade, some of the lessons and course material will need to be adapted to the developing cognitive capacities of the maturing students. Much of the content of the course can also be adapted to students in other settings, such as middle-class suburban schools. The results also will generalize over time to future fifth-grade classes in the school that were targeted for study.

This is a pilot study and thus the sample is small. A potential limitation is that the teacher effect may have confounded the experimental design. Although the fifth-grade classes mix informally during lunch and recess and both groups are under the supervision of both fifth-grade teachers at different times during the week, most of the academic time is spent with the homeroom teacher. Therefore, it is possible that the positive effects observed for the students in the treatment group could be due to specific behaviors of their homeroom teacher or to an interaction between the treatment and the behaviors of the homeroom teacher.

There is more work that must be conducted to further refine and develop the instruments. For example, it would be useful to pilot the cooperative attitudes questionnaires on larger samples so that the construct validity can be examined with a factor analysis. Despite these limitations, however, we believe that the findings are compelling and warrant further study.

This study is strong in that it addresses an important, fundamental need in urban schools, that is, the need to teach students skills and attitudes that will help them channel the potentially destructive energy from conflict toward constructive outcomes. Moreover, this study is groundbreaking in that it is the first presentation of a violence reduction program that links social interdependence theory with the construct of transforming power. It is believed that by developing this strong theoretical foundation, researchers can lead the field of violence reduction technology to a higher level with more powerful and more enduring effects. In addition, the study is based on a careful experimental design. Furthermore, the instruments designed to measure cooperative attitudes toward classmates and toward conflict show reliability and content validity.

We hope that this research will inspire educators to experiment with violence reduction interventions in their classrooms. Moreover, it is hoped that

practitioners will seek out more information about the theories and tools contained in Project WIN, especially the development of transforming power. Finally, it is hoped that educators will work closely with researchers so that high-quality evaluation data will become available to the scholarly community regarding the effectiveness of violence reduction interventions. The field is in great need of theory-based, evaluative studies that include (a) clear goals, (b) well-validated instruments, and (c) carefully designed experimental methods. Researchers and practitioners need to know which programs are having the most powerful impact and why. We believe that scientists and educators must apply every resource possible to the development of behavioral technologies that provide alternatives to violence as the ultimate power in determining the outcomes of human conflicts. We must provide our young people with tools and hope for more constructive ways to work out conflicts in the future.

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Laura Roberts received a Ph.D. from Penn State University in 1991 and is currently CEO of Roberts Educational Consulting Services. She serves as research advisor and statistical consultant for several school districts and universities in southeastern Pennsylvania. She helps schools implement and evaluate conflict resolution curricula and is working with Pax Christi, lobbying to include nonviolence education and anger management in the Catholic school curriculum in Washington, D.C.