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Project WIN Evaluation Shows Decreased Violence and Improved Conflict Resolution Skills for Middle School Students

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Abstract

We believe the problems of school violence are linked to competition and bullying in school culture. We also believe that by fostering more cooperation and more compassion in school culture, we can reduce school violence. One of the ways to develop school culture is to implement conflict resolution training. In the current study, we introduced conflict resolution training at a middle school. We chose to focus on middle school students because these are the years when bullying is especially prevalent in school culture. As a team of researchers and educators, we piloted a conflict resolution program, entitled Project WIN: Working out Integrated Negotiations, in a low-income, urban middle school in southeast Pennsylvania. The evaluation showed the program decreased reported violence and increased students' abilities to apply conflict resolution tools in hypothetical conflict situations. Specifically, the students learned to transform competitive situations into cooperative ones. Moreover, findings indicated greater competence in conflict-with-a-friend, as contrasted to conflict-with-a-classmate. We considered these results in the context of other work in this area, especially the Peacemakers model by David and Roger Johnson at the University of Minnesota.

Introduction

The current study was an evaluation of a conflict resolution program for early adolescents entitled Project WIN. The acronym stands for Working out Integrated Negotiations. We developed the lessons of Project WIN by conducting a thorough review of the research literature on effective violence reduction programs in schools. We concluded conflict resolution training was one of the most effective programs for reducing violence. Many experimental studies have supported this conclusion (Elliott, 2004; Greenberg, Kusche, & Mihalic, 1998; Johnson & Johnson, 1997; Johnson, Johnson, & Dudley, 1992; Johnson, Johnson, Dudley, Mitchell, & Fredrickson, 1997; Prothrow-Stith, 1998; Roberts & White, 2004; Roberts, White, & Yeomans, 2004).

Social interdependence theory was the basis for Project WIN. Morton Deutsch first posited this theory back in 1949. Successful programs such as Promoting Alternative Thinking Strategies (PATHS), created by Greenberg et al. (1998) and the Peacemakers program by David and Roger Johnson (Johnson, 1991; Johnson & Johnson, 1997) are also descendants in this theoretical lineage. Social interdependence theory seems to be the lineal key that differentiates successful programs from unsuccessful ones.

Social interdependence theory posits that ideal conditions for constructive conflict resolution exist when (a) there is a cooperative environment and (b) the disputants are skilled in negotiation strategies. Logically, then, we designed our program to (a) include skills to cultivate a more cooperative classroom environment, and (b) teach specific negotiation strategies.

We also drew from another closely related theory called conflict strategies theory, which posits that an individual has two main concerns when faced with a conflict: (1) reaching one's goal, and (2) maintaining a relationship with the opponent (Johnson, 1991; Johnson & Johnson, 1997).

In 1960, Larry Apsey described a theoretical aptitude called *transforming power,* which, he asserted, could help people transform violent, competitive, destructive situations into constructive, cooperative ones. Apsey claimed transforming power was a mystical construct, with a locus of control that transcended human will. We believed we could achieve the modest goal of teaching students some of the components of transforming power. Upon close inspection of Apsey's writing, we found that transforming power included compassion, empathy, and optimism. Therefore, these were the components we sought to teach students with the goal of helping them cultivate a more cooperative classroom environment. We taught students that each of them had access to transforming power and could develop it by adopting certain attitudes and values. To this end we taught a series of values clarification exercises in which we taught guides for developing transforming power. The guides were "self-respect," "caring for others," "think before reacting," "seek a nonviolent solution," and "expect the best."

Some of the negotiation strategies taught in Project WIN were (a) listening skills, (b) anger management, (c) using "I" messages to assert one's feelings during a conflict situation (Kreidler, 1997), (d) expressing one's needs in a conflict situation, and (e) generating solutions that meet one's own needs and the needs of the opponent. The education team also taught students about "you" messages—blaming statements that tend to escalate a conflict. We encouraged students to use "I" messages rather than "you" messages during conflict. (See Roberts et al, 2004, for more detail on the curriculum for Project WIN. Curriculum and lessons guides are also available from the first author.)

Both course content and pedagogy set apart the successful treatment programs from the unsuccessful ones. Our research revealed that successful programs used interactive teaching methods that incorporated behavioral and social skills training (Dishion, 2004; Elliott, 2004). In contrast, the following types of programs have been found to be ineffective and, in fact, make violence problems worse: programs that utilize scare tactics, "tough love," and adults lecturing at students (Dishion; "Get Tough," 2004).

Design

Experiment 1

This was a multi-experimental study. For experiment 1, the research question was: Would violence decrease during the year Project WIN was implemented? Based on prior studies that showed reductions in violence among students who were taught conflict resolution skills (Elliott, 2004; Greenberg et al., 1998; Johnson & Johnson, 1997; Johnson et al., 1992; Johnson et al., 1997; Prothrow-Stith, 1998) we hypothesized violence would decrease during the year that Project WIN was implemented. We expected violence among students in the classrooms that received Project WIN would decrease compared to students in other classes at the same school who did not receive the program. We were also interested in comparing *schoolwide* violence statistics to another school that did not receive Project WIN during the 2002–2003 school year.

Experiment 2
Experiment 2 had two questions for study as follows.

Question 2A. Would Project WIN improve students' abilities to resolve hypothetical conflict scenarios? Based on theory and prior evaluation studies of programs with similar lessons, it was hypothesized that the program would lead to more constructive conflict resolution strategies.

Question 2B. Would students respond more constructively to conflict-with-a-friend as contrasted to conflict-with-a-classmate? Social interdependence theory and conflict strategies theory posit that cooperative contexts foster constructive behaviors. Thus, it was hypothesized that students would exhibit higher level skills in the more cooperative context, i.e. conflict-with-a-friend, as contrasted to the more competitive context, i.e. conflict-with-a-classmate at school (Deutsch, 1973; Johnson & Johnson, 1989, 1994).

Experiment 1

Method
Participants. This research was conducted near Philadelphia, Pennsylvania, in one of the most economically disadvantaged school districts in the state. Forty percent of the children under the age of 18 live below the poverty line (twice the national rate) with a median family income of $26,000 (J. DiSabatino, personal communication, August, 2002). The target school contained grades K–8 and operated a "school-within-a-school" middle level model. The school population was approximately 550 students, consisting of primarily African Americans (78%), with 20% Caucasians, and 2% Hispanics. In the fifth grade classrooms that were selected for the implementation of Project WIN, a majority of students were female (64%), African American (75%), and received free or reduced-price lunch (78%). Nineteen percent of the students in the sample were Caucasian and 6% were Hispanic. The free or reduced-price lunch variable provided a proxy for economic status. Students with the greatest financial need were enrolled in the free and reduced-price lunch program.

Procedure. The researchers recruited all fifth graders in a low-income, urban, K–8 school and obtained informed written consent from all students and their parents. Students were randomly assigned to two homeroom classes at the beginning of the school year. One homeroom class had 19 students and the other homeroom class had 15 students.

Project WIN, the 17-session conflict transformation program, was taught to one homeroom class in the fall of 2002 and the other homeroom class in the spring of 2003. Each session was about 45 minutes in length and took place in the classroom just after the students' lunch period. The program teacher was a trainer for Woodrock, Inc., a Philadelphia-based nonprofit organization created to promote interracial harmony. His training included a degree in the Curriculum for Conflict Resolution and Peaceable Schools at Lesley College and a certificate from the Alternatives to Violence Program, an international, nonprofit organization created to teach nonviolent strategies to resolve conflicts. In order to ensure fidelity to the curriculum, the principal investigator observed each class session and kept a written transcript of the activities.

Independent variable. The independent variable was whether or not a student had participated in Project WIN. We designed the curriculum for Project WIN by conducting a thorough review of the effective conflict resolution programs for middle level students. We selected the components shown to be effective in experimental studies. The specific components of the curriculum drawn from prior literature were integrative negotiation skills training, anger management, and mediation skills. We also included a component designed to help students transform the climate of the classroom from a competitive to a more cooperative environment. All instruction was experiential in nature. In each session, students were actively engaged in the lessons through discussions, brainstorming, and role-playing. Other studies have demonstrated that nonviolence programs with active engagement are more successful than those that rely on adults lecturing to students (Aos, 2004). Roberts et al. (2004) describe the curriculum in greater detail.

Dependent measure. We requested information from a school administrator on violent incidents in the target classrooms, and in the school as a whole. The administrator did not respond to our request. Thus, classroom-level data were not available. Because all Pennsylvania schools have been required to report violence data to the Pennsylvania Department of Education (PDE) each year, schoolwide data were available at the end of the year. Instructions about reporting and defining violence incidents have been published by PDE (2006). To the extent school representatives reported information accurately, we concluded the data were valid and reliable. The comparison school was matched to the target school for school size (n = 796), ethnicity (the majority were African American), and socioeconomic status (the majority of students received free or reduced-price lunch).

Results

According to the PDE website (2006) there were zero violent incidents, zero assaults on students, zero assaults on teachers, zero weapons incidents, zero arrests, zero suspensions, and zero expulsions at the target school during the year Project WIN was implemented (see Table 1). The data indicated a drop in violence from the prior school year. The comparison school showed a steady increase in reported violence over the same time period.

Table 1
Violence Report for Project WIN School and Comparison School over Three-Year Period

Project WIN School	Year before Project WIN 2001/2002	Year of Project WIN 2002/2003	Year after Project WIN 2003/2004
Violent incidents	5	0	4
Number of offenders	4	0	5
Assaults on students	2	0	1
Assaults on teachers	1	0	1
Weapons incidents	3	0	3
Bomb threats	1	0	0
Local law enforcement notified	3	0	NR
Arrests	2	0	2
Suspensions	5	0	5
Expulsions	0	0	0
Assigned alternate education	2	0	2

Table 1 *(continued)*

Comparison School	Year before Project WIN 2001/2002	Year of Project WIN 2002/2003	Year after Project WIN 2003/2004
Violent incidents	9	21	22
Number of offenders	9	22	23
Assaults on students	1	6	NR[1]
Assaults on teachers	6	10	NR
Weapons incident	NR	NR	NR
Bomb threats	0	1	1
Local law enforcement notified	0	5	12
Arrests	0	2	7
Suspensions	NR	NR	NR
Expulsions	NR	NR	NR
Assigned alternate education	0	0	3

[1]NR = not reported

Experiment 2

Method

Participants. The subjects for Experiment 2 were the same subjects as Experiment 1. The difference was that we conducted a *schoolwide* comparison in Experiment 1 and in Experiment 2, we compared two classrooms within one school. One class was determined to be the treatment group (n = 19) and the other was the control group (n = 15). There were no differences between the treatment group and the control group on any of the demographic characteristics (gender, phi = -.05, $p < .77$; race, phi = .04, $p < .97$; and economic status, phi = .11, $p < .82$).

Independent variable. The independent variable for Experiment 2 was the same as for Experiment 1, i.e., the implementation of Project WIN.

Dependent variable. In September and October 2002, all students received a set of 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. The interview results appear in the current research report. The results of the questionnaire were presented elsewhere by Roberts and White (2004) and by Roberts et al. (2004).

At the end of the training, in December 2002, posttraining assessments were conducted with the same procedure used at pretraining. In addition, the treatment group received a 10-item quiz to check for mastery of the integrated negotiation skills. Some quiz items tested recall on definitions of skills and some items required

students to identify examples of skills. The results of this quiz showed most students (85%) had mastered the course content. We considered a score of 80% or better as an indication of mastery. The three students who did not achieve a score of 80% or better had several school absences, which may explain their lower scores. More detailed results were presented in Roberts et al. (2004).

During the interview, students were presented with two different conflict situations and were asked what they would do in each situation. The first scenario pertained to a conflict-with-a-classmate over taking turns at the computer in school. The second scenario, modeled after Johnson et al. (1997), pertained to a conflict-with-a-friend about how to spend a Friday evening. Johnson and his colleagues presented written conflict situations and requested each student to provide a written response explaining how he or she would behave in each situation. In the current study, the researchers modified the study format by reading the conflict scenarios to the students and recording their responses in writing and with tape recordings. This step was taken to control for possible reading and writing difficulties. The two conflict scenarios were as follows:

1. Conflict-with-a-classmate: Suppose you had your name on a list at school to use the computer in your classroom at 2:00 p.m. When you go to the computer at that time, another student, Alex, is using it. You explain that it is your turn, but Alex won't stop working on the computer. What would you do if you found yourself in this situation?

2. Conflict-with-a-friend: Suppose you and your friend Chris have a tradition of spending Friday evenings together. You have a lot in common with Chris and usually enjoy the same kinds of activities. One Friday, however, you have a disagreement. You want to go out with Chris to meet some other kids at a party, but Chris invites you over to watch a movie on TV. You and Chris have different ideas about what to do on this particular Friday evening. What would you do if you found yourself in this situation?

One of the two researchers interviewed each student in the teacher's lounge during a quiet reading period. After presenting the scenario, the researcher wrote down each student's response. If a particular student did not respond, the researcher gave two open-ended prompts to encourage the student.

After the interviews were completed, both researchers coded all responses in two different ways, as modeled by Johnson and his colleagues (1997). First, responses were coded according to a Strategy Constructiveness Scale developed from prior studies; second, responses were classified into categories as defined by conflict strategies theory (Johnson & Johnson).

With regard to the Strategy Constructiveness Scale, the responses were coded from the most destructive to the most constructive behavior. More specifically, the codes for the conflict-with-a-classmate were: 1 = tell the teacher, 2 = command/request, 3 = positive withdrawal, 4 = invoke norms, 5 = generate solutions, and 6 = negotiations. The codes for the conflict-with-a-friend were 1 = negative withdrawal, 2 = command/request, 3 = positive withdrawal, 4 = invoke norms, 5 = generate solutions, 6 = negotiations. Each researcher read and coded all of the responses. In some cases, a student would mention a lower-level response, and then elaborate the answer by offering a higher-level response. In these cases, the answer was coded according to the higher-level response. Kendall's *tau-b* statistic was selected to examine interrater reliability; this statistic is designed to examine correlations between paired, ordinal-level data. The correlations, provided in Table 2, were all significant and the coding was deemed reliable.

With regard to conflict strategies theory, each response was coded as follows: 1 = forcing, 2 = withdrawing, 3 = smoothing, 4 = compromising, 5 = negotiating. Each interview was coded by two researchers and each respondent was assigned a code based on his or her highest level response. Kendall's *tau-b* coefficients were computed to examine interrater reliability. These coefficients, reported in Table 1, were all significant and coding was deemed reliable.

Table 2
Reliability Coefficients for Conflict-With-a-Classmate and Conflict-With-a-Friend

Measure	Kendall's *tau-b*	
	Pretest	Posttest
Conflict-with-a-classmate		
Strategy Constructiveness	.46*	.75***
Conflict Strategies Theory	.71***	.72***
Conflict-with-a-friend		
Strategy Constructiveness	.47**	.62***
Conflict Strategies Theory	.55***	.62***

Note: $n = 34$
*$p < .05$ **$p < .001$ ***$p < .0005$

Results

Conflict-with-a-classmate. Strategy Constructiveness results for the conflict-with-a-classmate (pertaining to access to the computer) showed most students in the treatment group and control group offered low level responses at pretest (e.g., "I would tell the teacher," or "I would ask the other student to get off the computer.") At posttest, most students in the control group continued to offer low-level responses.

Consistent with the hypothesis, however, students in the treatment group provided higher level responses at posttest. For example, one student claimed he would have invoked norms for mutual respect as follows:

> I say, 'Alex, I [am] not trying to be mean, but I would like the respect you want. If you want me to show respect when you come in and I'm on the computer, you'd want me [to log] off.'

Approximately three-quarters of the students in the treatment group offered responses that incorporated constructive negotiations, such as the following: "I [would] use [an] 'I' message: I feel sad when I ask you to get up nicely and you don't."

In one lesson, the teacher provided a picture of a large thermometer on the board. He explained when anger increases, a conflict heats up. He used the rising temperature in the thermometer to represent the increasing tension during a conflict. One student demonstrated his understanding of the thermometer metaphor in the following example: "I'd use a couple 'I' messages. If he used 'you' messages, I'd try to calm him down so the thermometer doesn't go all the way up."

Mean scores for the Strategy Constructiveness Scale for the treatment and control groups at pretest and posttest are displayed in Table 3 and depicted visually in Figure 1. We analyzed these differential patterns of change with analysis of covariance (ANCOVA). The posttest score was the dependent variable, the pretest score was the covariate, and group membership was the predictor. These results (see Table 4) showed the treatment group exhibited significant improvement on the Strategy Constructiveness Scale, relative to the control group (F [1, 31] = 52.39, $p < .0005$). Moreover, the impact of the intervention accounted for 63% of the variance in change on the dependent variable, which is considered a moderate effect size (Cohen & Cohen, 1983). Because this test showed unequal variances across groups, a second analysis was conducted to examine the result when equal variance was not assumed. This test confirmed the finding of the initial test.

Table 3
Means and Standard Deviations of Coded Responses for Treatment and Control Groups

Measure	Control[a]		Treatment[b]	
	Pretest	Posttest	Pretest	Posttest
Conflict-with-a-classmate				
Strategy				
Constructiveness	2.07 (0.80)	2.07 (0.70)	2.05 (1.08)	5.26 (1.76)
Conflict Strategies	1.40 (0.83)	1.40 (0.91)	1.21 (0.63)	4.37 (1.50)
Conflict-with-a-friend				
Strategy				
Constructiveness	4.87 (1.36)	3.93 (1.33)	3.95 (1.75)	5.16 (1.64)
Conflict Strategies	4.07 (1.03)	3.40 (0.83)	3.58 (1.07)	4.47 (0.96)

[a]$n = 15$. [b]$n = 19$.

Table 4
Analysis of Covariance of Coded Responses for Treatment and Control Groups

Measure	*df*	*F*	*eta*	*p*
Conflict-with-a-classmate				
Strategy Constructiveness Scale	1	52.39***	.63	.0005
Error	31	(1.64)		
Conflict Strategies	1	52.86***	.63	.0005
Error	31	(1.48)		
Conflict-with-a-friend				
Strategy Constructiveness Scale	1	12.59**	.29	.001
Error	31	(1.73)		
Conflict Strategies	1	19.38***	.39	.0005
Error	31	(.66)		

Note: $n = 34$. Values enclosed in parentheses represent mean square errors.
**$p < .001$ ***$p < .0005$

With regard to Conflict Strategies Theory, most students in the treatment and control groups at pretest offered low-level responses such as telling the teacher, commanding the other student to get off the computer, or simply repeating earlier requests. These responses were coded as "forcing" according to this theory. At posttest, a large majority of students in the treatment group gave higher level responses which included smoothing (e.g., "I'll just wait a little longer,") compromising (e.g., "Maybe we can split the hour; thirty minutes each,") and negotiation as follows:

> "I would work it out with him."

> "I would ask him, 'What the matter?' 'Cause lots of time when people get mad real fast, there something wrong at home; maybe his parents got divorced."

> "I'd say, 'I'm working on something important.' I try to make it a win/win. I say 'Alex, I'll get on the computer today and let you on tomorrow … We both get what we want'."

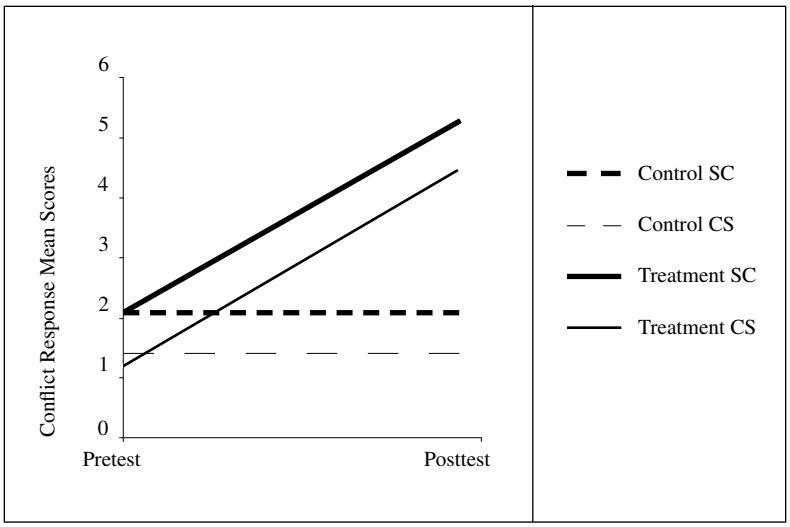

Figure 1. Differential patterns of change for treatment group versus control group on Strategy Constructiveness (SC) and Conflict Strategies (CS) responses to Conflict-with-a-classmate.

In comparison, most of the control group students persisted with forcing, a low-level type of response, at posttest.

The mean scores for each group at pretest and posttest are presented in Table 3 and visually in Figure 1. The mean-level changes were examined with analysis of covariance, with posttest scores as the dependent variable; group (experimental versus control) as the independent variable; and pretest scores as the covariate. According to this analysis (see Table 4), the treatment group showed significantly greater improvements in the level of their responses relative to the control group (F [1, 31] = 52.86, $p < .0005$.) Moreover, the effect of the program accounted for 63% of the variance in posttest scores, which was considered a moderate effect size, according to Cohen and Cohen (1983).

Conflict-with-a-friend. In the conflict-with-a-friend, the researchers asked students to consider a conflict about social plans for a Friday night. For the Strategy Constructiveness Scale at pretest, students generally offered constructive responses in which the conflict was reframed. Instead of viewing the situation as an either/or choice, students claimed both outcomes could occur sequentially. For example, typical responses were "I would go to the party and then go to Chris's house," or "I'd tell Chris that after we meet some friends, we go to your house and watch the movie."

At posttest for the treatment group, there was an increase in the constructive level of responses. For example, one student invoked a turn-taking norm as follows: "I'd have to know all the facts. Last week, did we do something he wanted to do? If it was my turn, we would go to the party."

One student suggested using transforming power to change a competitive situation to a cooperative one. Her response was as follows: "I try to use transforming power by saying, 'Hey, how about you bring the movie and we watch it at [the party]'." In contrast to the treatment group, the proportion of students in the control group who offered constructive responses declined from pretest to posttest.

The means and standard deviations for each group at pretest and posttest are displayed in Table 3 and depicted visually in Figure 2. The researchers conducted an analysis of covariance (ANCOVA) with posttest score as the dependent variable, pretest score as the covariate, and group (treatment versus control) as the independent variable. This analysis (see Table 4) showed the differential patterns of change for the two groups were significant (F [1, 31] = 12.59, $p < .001$). More specifically, the treatment group improved on the Strategy Constructiveness Score and the control group declined. Project WIN accounted for 29% of the variation in change for the two groups, a small effect size, according to Cohen and Cohen (1983).

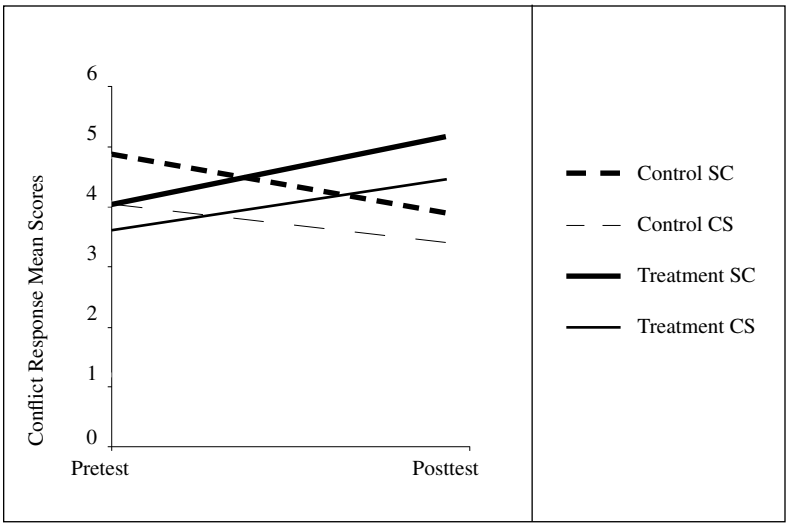

Figure 2. Differential patterns of change for treatment group versus control group on Strategy Constructiveness (SC) and Conflict Strategies (CS) responses to Conflict-with-a-friend.

With regard to conflict strategies theory, a similar coding pattern was found. Students in both groups offered relatively high-level responses at pretest. At posttest, students in the treatment group showed improvement and students in the control group showed decline. Typically, students in the post treatment group offered integrated solutions that met the needs of both people in the conflict. For example, one student suggested the following:

> "I'd say, 'You could record the movie and we could watch it on tape after the party'."

Students in the treatment group exhibited negotiation skills such as listening for feelings and taking their friend's perspective as follows:

> "I would listen for [Chris's] feelings."

> "Maybe he had a good reason [to skip the party]. Maybe the kid who was having the party plays tricks on him and busts on him."

> "[I would] be supportive to Chris, make sure I understand him."

Mean scores are displayed in Table 3 and depicted visually in Figure 2. We conducted an ANCOVA to test whether these differential patterns of change were significant. Results (see Table 3) showed significantly greater improvement for the treatment group relative to the control group (F [1, 31) = 19.38, $p < .0005$). Moreover, the treatment had a moderate effect size, accounting for 39% of the differences between groups from pretest to posttest.

Contrasting conflict-with-a-classmate versus conflict-with-a-friend. We hypothesized that students would provide more constructive responses to the conflict-with-a-friend scenario as compared to the conflict-with-a-classmate scenario. The researcher computed paired samples t-tests at pretest and at posttest for each group. These results are provided in Table 5. There were eight tests of this hypothesis (two groups [treatment and control], two time periods [pretest and posttest], and two coding schemes [strategy constructiveness and conflict strategies]). In order to control for type I error, the researcher used the Bonferroni adjustment for the alpha level (.05/8 tests = .006). Thus, the criterion for significance was $p < .006$. At pretest, conflict-with-a-friend was significantly more constructive than conflict-with-a-classmate. At posttest, conflict-with-a-friend remained higher than conflict-with-a-classmate for the control group. For the treatment group at posttest, however, the scores for the conflict-with-a-friend and the conflict-with-a-classmate skills were not significantly different.

Table 5
Paired t-Tests Comparing Conflict-With-a-Classmate versus Conflict-With-a-Friend by Group, Coding Scheme, and Time

Measure	Pretest			Posttest		
	df	*t*	*p*	*df*	*t*	*p*
Strategy Constructiveness						
Treatment Group[a]	18	-4.39***	.0005	18	.32	.76
Control Group[b]	14	-7.36***	.0005	14	-4.53***	.0005
Conflict Strategies						
Treatment Group	18	-8.23***	.0005	18	-.42	.68
Control Group	14	-8.37***	.0005	14	-5.68***	.0005

[a]$n = 19$. [b]$n = 15$. ***$p < .0005$

Discussion

The results showed Project WIN was effective at reducing violence at the target school. Reported violence dropped to zero during the year Project WIN was implemented. There were no violent incidents, assaults, arrests, or suspensions reported during the implementation year. In comparison, another school matched for size, ethnicity, and SES showed steady increases in reported violence over the same time period. We can infer that the students' use of the skills taught in Project WIN caused the drop in reported violence. We expected to see a drop in reported violence for the target class. We were surprised to see a schoolwide effect. These findings *do* make sense, however, given that our intervention was based on the social interdependence theory. It is reasonable to conclude that students in the target class taught their skills, by modeling to others at the school during the social time spent together (e.g., lunch period, playground, walking to and from school). We believe that once a critical mass starts to use Project WIN skills, transforming power takes effect, and violence drops.

Project WIN was effective at boosting students' constructive responses to conflict scenarios. This finding is consistent with other positive evaluations of the same program on different outcome measures (Roberts & White, 2004; Roberts et al., 2004) and the evaluations of the Peacemakers model, which also uses experiential lessons to teach social skills in middle school (Johnson et al., 1997) and in elementary school (Johnson et al., 1992; Johnson, Johnson, Dudley, & Acikgoz, 1994).

The students in the treatment group had learned to process conflicts in more cooperative ways. Instead of viewing outcomes as simplistic 'winner take all' situations, they learned to consider more complex possibilities in which both people could come out ahead, and in which both parties could win. Other successful conflict resolution programs have also taught students to transform competitive situations into cooperative ones (Greenberg et al., 1998; Johnson & Johnson, 1989, 1995; Prothrow-Stith, 1991). Transforming power, which is the ability to transform competitive situations into cooperative ones, is emerging in the research as a key aptitude for successful conflict resolution.

As predicted, students generally had more constructive responses for conflict-with-a-friend than for conflict-with-a-classmate. Consistent with this finding, Johnson and Johnson (1989, 1994) found schools are dominated by competitive norms, which would explain the less constructive responses with classmates.

An unexpected result for the control group was a decline in scores for the conflict-with-a-friend. Although the students in the control group initially had high-level skills for the conflict-with-a-friend, these skills declined over the duration of the study. Perhaps this decline is linked to contextual changes that take place in early adolescence. The study took place just after students started fifth grade. Students, at this juncture, develop

more competitive attitudes toward peers (Roberts et al., 2004) and engage in more fighting and bullying (Centers for Disease Control and Prevention, 1990; Oregon School Boards Association, 2001). This research points to early adolescence as a critical age when teachers should reinforce conflict resolution skills to prevent the decline we observed in this study.

One of the strengths of the current study is the use of ANCOVA to analyze change on the dependent variables. This is an improvement upon the gain scores reported in a similar study by Johnson and his colleagues (1997). The advantage of ANCOVA over the use of gain scores is greater control over the error term embedded in the pretest score (Cronbach & Furby, 1970; Cohen & Cohen, 1983). Another statistical advantage of the current study is that it includes a report of mean scores along with the inferential tests of group differences between mean scores. In contrast, the Johnsons' 1997 study provided inferential tests of differences between mean scores, but did not provide the mean scores. It is recommended in future research that the descriptive and inferential tests should be carefully matched as in the current study. Another statistical strength of the current study is the inclusion of effect sizes. These statistics are beneficial because they allow for comparisons of effectiveness from one program to the next, and also for meta-analyses across many studies. Elliott (2004) recommends that researchers include effect sizes to allow for better understanding of commonalities among effective violence reduction interventions. Other strengths of the current study are the experimental design and the theoretical and empirically based foundation.

Because this is a pilot study, the sample is small. A possible confounding variable of the experimental design is the effect of the homeroom teacher. Although the two fifth grade teachers worked as a team, during periods of academic instruction each class is taught by the homeroom teacher. Therefore, it is possible that the improvements on constructive responses in the treatment group could be due to behaviors of their homeroom teacher. Another confounding factor for internal validity pertains to instrumentation. There is a need to add more conflict scenarios to allow for additional reliability checks. Despite these limitations, the results of this study provide useful insights and warrant further research.

These results generalize to students with characteristics similar to the study sample, more specifically, to low income, urban, middle school students with a high proportion of minority representation. In addition, the results will generalize to other fifth grade classes in the target school in the years ahead. There is a need for more research on violence reduction among low-income, urban samples because they represent a population at high risk (Prothrow-Stith, 1991). It is also recommended that future researchers in this field conduct observational studies of students on the playground and in the cafeteria to understand how students apply their conflict resolution skills to real life situations.

According to the National Institutes of Health (NIH) (2004), effective interventions are currently underutilized and ineffective interventions (e.g., scare tactics, boot camps) are over utilized and sometimes unsafe. The NIH recommends discarding ineffective programs. Further, the NIH claims research in this area has progressed at a rapid pace over the past 10 years and all stakeholders (i.e., school administrators, funding agencies, federal agencies) should draw from this strong body of research to choose and support effective programs. Effective programs are ones, like Project WIN, that (a) use experiential methods to teach conflict resolution skills and (b) teach values that help students transform competitive situations to cooperative ones.

There is a pressing need for researchers to forge stronger liaisons with practitioners, in particular with school superintendents and principals. One way researchers can do this is by using language that recognizes the practical economic realities school administrators face each day. For example, researchers can emphasize that the benefits of this technology more than cover the costs (Aos, 2004). In addition, it is recommended that researchers seek out school administrators who are already engaged in systematic violence reduction initiatives and offer guidance in the form of research expertise.

There is also a need for researchers to connect with people in the school community, with parents, school board members, law enforcement officers, clergy, and mental health professionals. Many of these people probably do not know about the scientific evidence that supports the use of conflict resolution. If people in

the community learn how effective these skills are, they might begin to work together to implement conflict resolution in their schools. They might also begin to use these skills in their own lives and homes, so that students bring the spirit of cooperation with them to school in the morning.

Key to our success will be our effective communication with visionary people in local communities. There is a wise proverb about seeking out and finding those with vision. An ordinary person looks at a stone and sees only a simple stone. A craftsperson observes a stone and sees more. He or she sets eyes on the stone and thinks, "I could find more of these stones, put them together with mortar and build a wall." An architect, a designer, has even greater vision. In that small stone an architect sees an entire building, a church or a school, a place of higher purpose. The visionaries among us see the higher purpose of all small things. We hope our work in conflict resolution will inspire the visionaries in many towns and cities across the country to see the higher purpose of this one small stone as we build safer schools and safer communities for our children's future.

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References

Aos, S. (2004, October). Costs and benefits of different prevention and intervention systems. In *Interventions to reduce violence and related behaviors: Commonalities, costs, and practice.* Symposium conducted at National Institutes of Health State-of-the-Science Conference: Preventing Violence and Related Health-Risking Social Behaviors in Adolescents, Bethesda, MD.

Apsey, L. (1960). *Transforming power for peace.* Philadelphia, PA: Friends General Conference.

Centers for Disease Control and Prevention. (1990). *Youth risk behavior surveillance system* (YRBSS). Atlanta, GA: Author.

Cohen, J., & Cohen P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences.* Hillsdale, NJ: Erlbaum.

Cronbach, L. J., & Furby, L. (1970). How should we measure "change"—or should we? *Psychological Bulletin, 74*(1), 68–80.

Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations, 2,* 129–152.

Deutsch, M. (1973). *The resolution of conflict.* New Haven, CT: Yale University Press.

Dishion, T. J. (2004, October). Features of ineffective and/or unsafe interventions. In *Interventions to reduce violence and related behaviors: Commonalities, costs, and practice.* Symposium conducted at National Institutes of Health State-of-the-Science Conference: Preventing Violence and Related Health-Risking Social Behaviors in Adolescents, Bethesda, MD.

Elliot, D. S. (2004, October). Commonalities among safe and effective interventions. In *Interventions to reduce violence and related behaviors: Commonalities, costs, and practice.* Symposium conducted at National Institutes of Health State-of-the-Science Conference: Preventing Violence and Related Health-Risking Social Behaviors in Adolescents, Bethesda, MD.

'Get tough' youth programs are ineffective, panel says. (2004, October 17). *The New York Times,* p. 10.

Greenberg, M. T., Kusche, C., & Mihalic, S. F. (1998). *Blueprints for violence prevention, Book 10: Promoting alternative thinking strategies* (PATHS). Boulder, CO: Center for the Study and Prevention of Violence.

Johnson, D. W. (1991). *Human relations and your career* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Johnson, D. W., & Johnson, R. (1989). *Cooperation and competition: Theory and research.* Edina, MN: Interaction Books.

Johnson, D. W., & Johnson, R. T. (1994). *Leading the cooperative school* (2nd ed.). Edina, MN: Interaction Books.

Johnson, D. W., & Johnson, R. T. (1995). *Teaching students to be peacemakers.* (3rd ed.). Edina, MN: Interaction Books.

Johnson, D. W., & Johnson, R. T. (1997). Conflict resolution and peer mediation programs in elementary and secondary schools: A review of the research. *Review of Educational Research, 66*(4), 459–506.

Johnson, D. W., Johnson, R., & Dudley, B. (1992). Effects of peer mediation training on elementary school students. *Mediation Quarterly, 10,* 89–99.

Johnson, D. W., Johnson, R., Dudley, B., & Acikgoz, K. (1994). Effects of conflict resolution training on elementary school students. *Journal of Social Psychology, 134,* 803–817.

Johnson, D. W., Johnson, R. T., Dudley, B., Mitchell, J., & Fredrickson, J. (1997). The impact of conflict resolution training on middle school students. *Journal of Social Psychology, 137*(1), 11–21.

Kreidler, W. (1997). *Conflict resolution in the middle school.* Cambridge, MA: Educators for Social Responsibility.

National Institutes of Health. (2004). Introduction to preventing violence and health-risking social behaviors in adolescents: An NIH State-of-the-Science conference. Retrieved October 15, 2004, from http://consensus.nih.gov/2004/2004YouthViolencePreventionSOS023html.htm

Oregon School Boards Association. (2001). *School violence statistics.* Salem, OR: Author.

Pennsylvania Department of Education. *School safety collection system.* (2006, October 10). Retrieved October 10, 2006, from http://www.safeschools.state.pa.us/vwp.aspx?command=true

Prothrow-Stith, D. (1998). *Peace by piece: A violence prevention guide for communities.* Boston: Harvard School of Public Health.

Prothrow-Stith, D. (with Weissman, M). (1991). *Deadly consequences: How violence is destroying our teenage population and a plan to begin solving the problem.* New York: HarperCollins.

Roberts, L., & White, G. (2004). An endurance test for Project WIN: A conflict transformation program in a low-income, urban, middle level classroom. *Research in Middle Level Education Online, 27*(1).

Roberts, L., White, G., & Yeomans, P. (2004). Theory development and evaluation of Project WIN: A violence reduction program for early adolescents. *Journal of Early Adolescence, 24*(4), 460–483.

