ARTICLES

Evaluating Peer Mediation Outcomes in Educational Settings: A Meta-Analytic Review

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This investigation summarizes existing research on peer mediation outcomes in school-based settings. The meta-analytic review examines the outcomes associated with incorporating a mediation program to manage school conflict. Results indicate a 93 percent agreement rate and that 88 percent of the participants were satisfied with the agreements reached. The review answers critics and demonstrates the value of school-based mediation programs.

The national focus for educators seems to be on increasing reading and math test scores rather than on curriculum-based conflict resolution programs. When resources are tight, school administrators revise school budgets, excluding curriculum extras such as peer mediation and peace studies programs. Results from the Comprehensive Peer Mediation Project (CPMEP) overwhelmingly indicate that peer mediation programs "provide significant benefit in developing constructive social and conflict behavior in children at all educational levels" (Jones, 1998, p. 18). Ironically, we are cutting the very school programs that have the potential to improve learning climates that ultimately could raise national test scores.

Peer mediation programs train students as neutral third parties to intervene and assist other students in the resolution and management of interpersonal disputes (Jones and Brinkman, 1994). Typically, the training is approximately fifteen hours of learning about interpersonal conflict, active listening, paraphrasing, reframing, and role playing (Jones and Brinkman, 1994; Burrell and Vogl, 1990). Student mediators encourage their peers to explore issues systematically and to do problem solving

collaboratively. The goal of peer interventions is to generate agreements acceptable to everyone and to develop a strategy to handle similar problems in the future.

This meta-analysis of mediation outcomes in schools reviews existing studies of mediation practices in elementary and secondary schools employing a problem-solving approach to mediation. The meta-analysis examines the effectiveness of mediation (ability to reach agreements and satisfaction of the participants) and related outcomes in educational settings (positive impact on school climate, perceptions of the level of conflict in the school, reduction in behavior requiring disciplinary action).

Issues in School-Based Mediation Programs

To review studies evaluating mediation programs in school settings, several components were identified and measured. The broad categories for outcome measures included behavioral indicators of conflict for students, mediation outcomes that reflected how many conflicts were resolved and agreements reached, student and teacher perceptions about conflict and individual attitudes toward conflict in the school, and personality factors related to conflict resolution such as student self-concept or self-esteem. In addition, since the school mediation programs followed a problem-solving approach, much emphasis was placed on the training and use of communication skills, understanding the dynamics of conflict, and identifying specific conflict strategies that could be used when dealing with conflict.

Specific research studies looked at various aspects of these broader components. For behavioral indicators, the types of conflict among students, the nature or intensity of the disputes, or the frequency of conflict situations occurring on school property were identified (Johnson, Johnson, Mitchell, Cotton, Harris, and Louison, 1996; Roush and Hall, 1993; Lindsay, 1998; Johnson, Johnson, Dudley, and Acikgoz, 1994; Johnson, Johnson, and Dudley, 1992; Johnson, Johnson, Cotton, Harris, and Louison, 1995; Johnson, Johnson, Dudley, Ward, and Magnuson, 1995; Hart and Gunty, 1997; Bodtker and Jones, 1997). The types and frequencies of conflict reported may include such acts as physical aggression, insults, playground issues, or problems with turn taking (Johnson, Johnson, Dudley, Ward, and Magnuson, 1995). One study looked at mediation skill transference from the school to the home environment and identified behavioral indicators of conflict within the home and how

the student mediators addressed them (Gentry and Benenson, 1993). The suggestion that students who are trained in conflict resolution strategies apply those skills to settings that are external to the school environment in which they were learned (Johnson, Johnson, and Dudley, 1992) implies that training students can have longer-lasting impact and affect wider audiences (siblings, families, and the community at large). Unfortunately, the lack of data on this point does not permit inclusion of this feature as part of the meta-analysis. The potential transference of skills points to a target area for future research studies on the impact of mediation in the schools.

Many school-based mediation programs follow a process in which peer mediators (third-party neutrals) work with disputing students to help them through a process in order to achieve resolution, something that is easily measured by the number of agreements reached for the number of mediations attempted (Araki, 1990; Crary, 1992; Daunic and others, 2000; Hart and Gunty, 1997; Johnson, Johnson, Mitchell, Cotton, Harris, and Louison, 1996; Johnson, Johnson, Cotton, Harris, and Louison, 1995; Roush and Hall, 1993). Similarly, the satisfaction of participants involved in the mediation process is easily measured and generally results in highly positive satisfaction findings (Crary, 1992; Gerber, 1999; Hart and Gunty, 1997; Johnson, Thomas, and Krochak, 1998).

Since the basic premise of many school-based mediation programs is that conflict resolution strategies can be taught to students, and knowledge about these resolution strategies can then be applied to conflict situations and results effected, it is important to determine the degree to which this training is effective and the ages at which training can occur. Studies differentiate between learning about various conflict strategies and how they might be used in conflict situations (Bodtker and Jones, 1997; Johnson, Johnson, Dudley, Mitchell, and Fredreickson, 1997; Johnson, Johnson, Dudley, and Magnuson, 1996; Stevahn, Johnson, Johnson, Laginski, and O'Coin, 1996) and the actual ability to apply appropriate conflict resolution knowledge and strategies in specific situations (Gentry and Benenson, 1993; Johnson, Johnson, and Dudley, 1992; Stevahn, Johnson, Johnson, Green, and Laginski, 1997), or the presence of both attributes (Johnson, Johnson, Dudley, and Acikgoz, 1994; Johnson, Johnson, Dudley, and Magnuson, 1995; Johnson, Johnson, Dudley, Ward, and Magnuson, 1995; Stevahn, Johnson, Johnson, and Real, 1996).

The idea that conflict resolution strategies and participation in school-based mediation programs potentially affect self-concept and self-esteem

in students presents an intriguing concept for expectations of a problem-solving approach to mediation. Several studies looked at the effects of mediation programs on student self-esteem or teacher perception of changed self-concept, mostly with inconclusive results (Crary, 1992; Gentry and Benenson, 1993; Roush and Hall, 1993; Vanayan, White, Yuen, and Teper, 1996). Combining the results from these individual studies and testing them through the meta-analytic process produces a clearer understanding of statistical significance. However, some of the studies question the selection of student mediators and the potential to recognize the greatest gains in changed self-concept among students who initially had lower self-esteem (Roush and Hall, 1993; Vanayan, White, Yuen, and Teper, 1996).

Related to student changes in self-esteem are measurements on conflict orientation and changes in school climate as a result of mediation program interventions. Orientation to conflict refers to student perceptions about the nature of conflict and resulting outcomes. Is conflict viewed as a problem, or an opportunity for change? Does the perception of conflict resolution connote a win-lose or a win-win outcome? Since conflict represents an inevitable component of student life, being able to positively affect perceptions of conflict and the importance of constructive resolution strategies presents a key to long-term changes in student behavior and the overall impact on school climate. Though some studies cite anecdotal evidence supporting positive changes in conflict orientation and school climate (Johnson, Johnson, Dudley, and Magnuson, 1995; Johnson, Johnson, Dudley, and Magnuson, 1996), only a few report statistical data related to school climate (Lindsay, 1998; Bodtker and Jones, 1997; Hart and Gunty, 1997).

A final area that has been included in the school-based mediation research involves conflict knowledge and influencing positive perceptions of conflict (Stevahn, Johnson, Johnson, Laginski, and O'Coin, 1996; Stevahn, Johnson, Johnson, and Real, 1996). Some of the studies specifically measured the improved knowledge about conflict through the effective conflict resolution strategies employed in handling them (Johnson, Johnson, Dudley, Mitchell, and Fredreickson, 1997; Johnson, Johnson, Dudley, and Acikgoz, 1994; Johnson, Johnson, and Dudley, 1992; Stevahn, Johnson, Johnson, Green, and Laginski, 1997). When students better understand the dynamics of conflict, they are better equipped to deal constructively with conflict resolution and use appropriate skills in handling conflict.

Although there are many supporters of school-based mediation programs, critics have surfaced (Gerber, 1999; Webster, 1993). Research supporting school mediation programs has been criticized as being "primarily anecdotal and supplied by teachers and administrators, who report that peer mediation programs reduce suspension and detention rates" (Johnson, Johnson, Dudley, Ward, and Magnuson, 1995, p. 832). Other critics claim there is no evidence that mediation programs reduce interpersonal violence, but rather that the programs provide political cover for politicians and school officials, distracting the public from the structural determinants of youth violence (Webster, 1993).

Methods

This section describes the selection of literature and the meta-analytic techniques.

Literature Research Description

To be included in the meta-analysis, studies needed to possess these characteristics:

- Include students in an educational facility encompassing one or more grade levels between kindergarten and high school senior year as the sample population in the research.
- Use quantitative research methodologies resulting in numerical representation of measurable effects or outcomes.
- Involve at least one variable relating to mediation training or practices among student peers in which outcomes or effects of the training or actual mediation procedures were measured.

Data from forty-three studies meeting the inclusion criteria (indicated by asterisks in the references) were included in this meta-analysis from the examination of more than two hundred manuscripts generated by the search. Data sets appearing in multiple manuscripts were entered only once in the database. Data sets ranged in date from 1985 to the present. Manuscripts were eliminated from the study if they did not meet these criteria or if they relied on research with no quantitative data (the case with Chetkow-Yanoov, 1996; Harris, 1996; Heller, 1996; Hill, 1996; Nor, 1996), evaluated comparative data among training practices without measuring

Table 1. Summary of Studies Used in the Analysis

Study (Lead) Author	*Date*	*Grade*[1]	*No. of Mediations*	*No. (Percentage) of Agreement*	*Effect Size*	*Outcome Type*[2]
Araki	1990	H, I, E	136	133 (98)		
Bodtker and Jones	1997	H			.000	SC
					.000	CSU
Bradley	1989	H	65	62 (95)		
Casella	2000	H			−.333	SR
Crary	1992	I	95	92 (97)	−.043	TPC
					.010	SE
Daunic, Smith, Robinson, Landry, and Miller	2000	I	165	157 (95)		
Davis, A.	1986	H	290	236 (81)	−.222	SR
Davis, G.	1994	H			−.333	SR
Gentry and Benenson	1993	I			.397	CSU
					−.417	SR
					.235	SE
Hart and Gunty	1997	E	350	340 (97)	−.042	SR
Johnson, Johnson, Mitchell, Cotton, Harris, and Louison	1996	E	323	317 (98)		
Johnson, Johnson, Cotton, Harris, and Louison	1995	E	290	309 (94)		
Johnson, Johnson, and Dudley	1992	E			.670	FM
					.330	TPC

Johnson, Johnson, Dudley, and Acikgoz	1994	E			.889	FM
					.831	CSU
					−.200	TPC
					−.200	SR
Johnson, Johnson, Dudley, and Magnuson	1995	E			.546	FM
					.415	CSU
Johnson, Johnson, Dudley, and Magnuson	1996	E			.552	MKC
					.436	CSU
Johnson, Johnson, Dudley, Mitchell, and Fredreickson	1997	I			.811	MKC
					.426	CSU
Johnson, Johnson, Dudley, Ward, and Magnuson	1995	E			.275	FM
					.268	CSU
Jones and Brinkman	1998	E, I, H	358	315 (88)		
Kinasewitz	1996	H	24	21 (88)	−.120	SR
Kirleis	1995	H			−.250	SR
					.426	CSU
Kolan	1999	H	120	111 (93)		
Lam	1989		13	13 (100)	.372	MVC
Payne	1993	I	271	241 (89)		
Rousch and Hall	1993	E, I	52	50 (96)	−.215	SR
					.544	MKC
Sherrod	1995				−.400	SR
Smart	1987	H, I			−.333	SR
Stader and Johnson	1999	H	67	52 (78)	−.330	SR
Stern	1986	I			.365	SC
					.472	SE
Stevahn, Johnson, Johnson, Green, and Laginski	1997	H			.429	AA
					.589	MKC

(*Continued*)

Table 1. Summary of Studies Used in the Analysis (Continued)

Study (Lead) Author	*Date*	*Grade*[1]	*No. of Mediations*	*No. (Percentage) of Agreement*	*Effect Size*	*Outcome Type*[2]
					.793	FM
					.433	CSU
					.329	MVC
Stevahn, Johnson, Johnson, Laginski, and O'Coin	1996	H			.360	AA
					.793	MKC
					.802	CSU
					.259	MVC
Stevahn, Johnson, Johnson, and Real	1996	E, I			.410	AA
					.960	MKC
					.347	CSU
Terry and Gerber	1997	H	39	39 (100)		
Tolson and McDonald	1992	H			−.366	SR
Vanayan, White, Yuen, and Teper	1996	I			.118	SE
					.118	SC
					.118	MKC
					.118	SR
Webne-Behrman	1989	H, I	56	42 (75)		

Note: Several studies provided estimates from multiple samples; the estimate reported in this table is the average estimate for the combined study. Individual estimates may be obtained from the authors.

[1]The letter indicates the level of grades in the analysis, where E = elementary, I = intermediate, and H = high school.

[2]The type of dependent variable provided is as follows: SC indicates school climate, TPC = teacher perception of conflict, SR = use of school disciplinary records, MKC = mediator's level of knowledge about conflict, FM = ability to follow directions about how to mediate, CSU = type of conflict strategy used, MVC = mediator view of conflict, AA = academic record, and SE = level of self-esteem.

training outcomes, included measures for mediation predictors such as hostile environment or bullying without evaluating mediated interventions (Whitney and Smith, 1993), reported no sample size (Thompson, 1996), or relied on sample populations drawn from university students or communities at large (Johnson, 1967; Leadbeater, Hellner, Allen, and Aber, 1989; Ross, Fischer, Baker, and Buchholz, 1997).

Coding of Program Outcomes

The outcomes implementing mediation programs and training were divided into four general categories: (1) descriptive outcomes, (2) impact on the schools, (3) issues related to conflict resolution, and (4) impact on the mediator.

Descriptive outcomes consisted of two aspects of mediation: percentage of successful mediations or agreements reached, and satisfaction with the overall agreement. When assessing mediation programs, tracking the number of agreements that occurred is important for continued support of school administrators, teachers, and staff. If agreement was reached, then the students' problems have been addressed. In addition, in order for any program to maintain support, it is paramount that participants be satisfied with the outcomes and overall process.

The second category centered on the overall impact of mediation training or program on the schools. There were three measures in this cluster: students' perceptions of school climate related to conflict; teachers' and administrators' perceptions of the school conflict climate; and behavioral indicators such as fighting, suspensions, expulsions, and other disciplinary actions. This combination of measures indicates the level of conflict, both perceptual and behavioral, from students' and adults' perspectives.

The third category relates to the impact of mediation training on mediators' views about interpersonal conflict. Four measures were included in this cluster: knowledge about conflict, ability to follow procedures during a mediation session, strategies used to resolve conflict, and view of interpersonal conflict. The first measure reflects whether the training increased participants' knowledge about conflict. The second measure indexed trainees' ability to facilitate a mediation session using guidelines established by the program. The third measure indicates the general strategies mediators use to address conflict. The fourth measure in this cluster evaluates whether student mediators view interpersonal conflict positively or negatively.

The last category focuses on the impact of mediation training on trainees. Two measures in this category are academic achievement and

self-esteem. The purpose of these measures is to determine the impact of mediation training on participants. Program evaluators wanted to know if students' grades might improve with mediation training and whether participants might feel better about themselves.

Statistical Procedure

Three stages occurred in this analysis: (1) transformation, (2) averaging, and (3) heterogeneity testing. This meta-analytic review used the variance-centered technique developed by Hunter and Schmidt (1990). Transformation is the process of converting statistical information to a common metric. The correlation coefficient is the metric used in this review. In short, all of the studies' statistical information was transformed into correlation coefficients as outlined by Hunter and Schmidt. The second stage was the averaging process, which computes a weighted average using the sample size of the individual effect as the weight. Finally, testing for homogeneity was the third step in this process. The homogeneity test examines whether the inconsistency in observed effects can be attributed to sampling error. A chi-square test compares the observed variability to the expected variability to sampling error. A nonsignificant chi square indicates that the sample of correlations can be considered homogeneous, whereas a significant chi square indicates heterogeneity among the effects.

Results

Results of the meta-analysis reveal important contributions of peer mediation programs.

Descriptive Outcomes of Mediation Programs

The first step is to analyze the ability of the program to resolve disagreements. The obvious goal of mediation programs is to give students an opportunity to resolve conflicts with their peers rather than to have an adult solve their problems for them. Twenty-three studies report the results of 4,327 mediations, with 4,028 reaching agreement (for a 93 percent success rate). This high percentage of agreements reached indicates the success of mediation programs in the schools.

However, reaching an agreement is not the only index of a successful program. Disputants must also feel satisfied with the process itself. Fifteen studies report survey data on 4,739 mediations. The results indicate that

4,191 of the disputants in mediation are satisfied with the agreement, for an 88 percent satisfaction rate. Again, this high percentage indicates not only that agreements have been reached but also that participants were pleased with the outcomes of their mediation process. It may also be the case that students feel empowered to resolve their own disputes rather than being told how to solve their problems by an adult.

Impact of Mediation Programs on Schools

The first outcome measure from the perception of students is how they view their school climate. Five studies examine the impact of mediation programs on school climate and find that mediation programs have a positive effect on school climates ($r = .441$, $k = 5$, $N = 527$, $p < .05$). These results indicate that students perceive a positive school environment. The test of homogeneity finds the sample of correlations heterogeneous, $\chi^2 = 20.61$ (4, $N = 527$), $p < .05$. Because of heterogeneity, the average correlation should be interpreted cautiously. An examination was made for outlier studies. One estimate (Bodtker and Jones, 1997) had a correlation entry of .000. This estimate was based on their reporting of a nonsignificant finding and was the best reasonable estimate of the relationship. When compared to the average estimate, it has a z score in excess of 4.00, indicating that the study functions as an outlier. Reestimating the average effect ($r = .441$, $k = 4$, $N = 443$, $p > .05$) creates a homogeneous set of correlations $\chi^2 = 4.86$ (3, $N = 443$), $p > .05$. In short, these findings indicate that school climates improve after the implementation of a mediation program. A complete summary of all the findings involving average r calculations is found in Table 2.

A second measure centers on teachers' and administrators' perception of conflict in their respective schools. The results indicate that a mediation program reduces the perception of conflict in a school ($r = -.093$, $k = 4$, $N = 379$, $p < .05$). In other words, both teachers and administrators perceive a reduction in conflict. The test of homogeneity finds the sample of correlations homogeneous, $\chi^2 = 2.15$ (3, $N = 379$), $p > .05$. The studies consistently find that both teachers and administrators perceive a reduction in conflict. These results indicate that professionals, on a day-to-day basis, attribute less conflict after implementing mediation programs.

A third systemic measure deals with data from school records such as suspensions, expulsions, fighting, and other disciplinary actions. The implication of mediation programs is a drop in disciplinary actions

Table 2. Summary Data Information

	Average Correlation	*Standard Error*	*95% CI for r*	*z Statistic Test for r*	*Homogeneity Test of Sample*
Impact on school					
School climate	.441	.198	±.388	2.23*	20.61*
Conflict perception	−.093	.075	±.147	1.24	2.15
School records	−.287	.117	±.221	2.49*	77.22*
Conflict change					
Knowledge	.530	.218	±.427	2.43*	53.84*
Follow directions	.495	.208	±.407	2.38*	37.74*
Strategies used	.410	.215	±.422	1.91	61.11*
View of conflict	.341	.106	±.207	3.22*	3.81
Impact on mediator					
Academic	.404	.028	±.056	14.43*	0.18
Self-esteem	.110	.133	±.261	.83	4.19

Note: * = results that are statistically significant at the $p < .05$ level.

required by administrators ($r = -.287$, $k = 17$, $N = 5{,}706$, $p < .05$). These results indicate that the implementation of a mediation program is related to a drop in administrative suspensions, expulsions, and disciplinary actions. The test of homogeneity finds the sample of correlations heterogeneous, $\chi^2 = 77.22$ (16, $N = 5{,}706$), $p < .05$. Because of heterogeneity, the average correlation should be interpreted cautiously. Heterogeneity means that the sample of correlations does not represent a single distribution but instead indicates the probability of moderator variables. However, sixteen of the seventeen effects were positive, suggesting that any moderator variable would be indicating differences between small positive and large positive effects. Therefore, the average effect even after considering a moderator variable will always be positive. In short, the data indicate a reduction in disciplinary actions after the implementation of mediation programs.

Issues Related to Conflict

The next set of measures reflect peer mediators' perceptions about conflict. The first measure, knowledge about conflict, reflects what students learned about interpersonal conflict from their mediation training ($r = .530$, $k = 14$, $N = 1{,}138$, $p < .05$). These results indicate that

students' knowledge and understanding about interpersonal conflict increased from their training. The test of homogeneity finds the sample of correlations heterogeneous, $\chi^2 = 53.84$ (13, $N = 1{,}138$), $p < .05$. The range in correlations is $r = .118$ to $r = .960$, which indicates a large variability. The variability in knowledge gained about conflict may reflect differences in mediation training programs, content of the knowledge tests, and different selection processes of mediators between school districts.

A second measure centered on students' ability to follow the steps prescribed in mediating a dispute. Results ($r = .495$, $k = 9$, $N = 805$, $p < .05$) indicate that students are indeed able to follow the steps in mediating interpersonal conflicts. The test of homogeneity finds the sample of correlations heterogeneous, $\chi^2 = 34.74$ (8, $N = 805$), $p < .05$. Because of heterogeneity, the average correlation should be interpreted cautiously. These findings may index differences in the simplicity or complexity of the mediation training programs.

A third measure centered on the strategies mediators used to resolve interpersonal conflict. Results show that mediation training changes the way mediators address interpersonal conflicts and disputes ($r = .410$, $k = 15$, $N = 1{,}318$, $p < .05$). The test of homogeneity finds the sample of correlations heterogeneous, $\chi^2 = 61.11$ (15, $N = 1{,}318$), $p < .05$. These findings, although heterogeneous, reflect a distribution of all positive effects. Therefore the average effect demonstrates that mediators' intervention strategies were consistent with the training.

A fourth measure centered on mediators' view of conflict (either positive or negative). Results of mediation training indicate an increased positive view of conflict from peer mediators' perspectives ($r = .341$, $k = 5$, $N = 297$, $p < .05$). The test of homogeneity finds the sample of correlations homogeneous, $\chi^2 = 3.81$ (4, $N = 341$), $p > .05$. These findings indicate that student mediators' perceptions of conflict were more positive after their training.

Impact of Training and Being a Mediator

These two measures look at the impact of both training and being a peer mediator for a year. The first measure centers on academic achievement of mediators. Results show that peer mediators' grades went up ($r = .404$, $k = 4$, $N = 223$, $p < .05$). The test of homogeneity finds the sample of correlations homogeneous, $\chi^2 = 0.18$ (3, $N = 223$), $p < .05$. These findings indicate a substantial increase in academic performance after becoming a mediator.

A second measure centered on mediators' self-esteem. Results indicate that peer mediators' sense of self improved over the academic year ($r = .110$, $k = 4$, $N = 237$, $p < .05$). In other words, by being a school mediator the student's sense of self improved. The test of homogeneity finds the sample of correlations homogeneous, $\chi^2 = 4.19$ (3, $N = 237$), $p > .05$. Similarly, these findings point to improved self-esteem after becoming a mediator.

Discussion

The results of this meta-analytic review of school-based mediation programs overwhelmingly support the effectiveness of mediation programs in educational settings. The study demonstrates that student training on understanding conflict situations and learning appropriate conflict resolution strategies to help students resolve conflict can be successfully implemented in elementary and secondary schools. Basically, conflict resolution skills can be taught to students, and students can effectively demonstrate the use of these skills in mediating peer conflicts and helping disputants reach agreement. Student satisfaction with the peer mediation process is highly positive for mediation programs. Ideally, this conclusion will encourage schools without mediation programs to implement a peer mediation program to manage interpersonal conflict.

The question of how important the findings of the studies are for practical application can best be expressed using the Binomial Effect Size Display (BESD), developed by Rosenthal for expressing average effects generated by meta-analysis (Rosenthal, 1984). A complete BESD display of the findings appears in Table 3. This representation demonstrates the importance and impact of the change that the presence of a mediation program should be expected to produce in a school. The smallest change is a 22 percent increase for self-esteem and a 22 percent decrease in the teachers' perceptions of conflict at school. Interestingly, the actual school records indicate a larger diminished level of behavioral problems (68 percent) than the perceptual measures. The representation in the table should leave little doubt about the importance of the size of the average effects estimated. The next step, as suggested by Sandy (2001), should be a concentration on establishing "best practices" to facilitate the implementation of programs. The results indicate only that the presence of the program produces a desirable outcome, without providing information on what constitutes optimal

Table 3. Binomial Effect Size Display for Interpreting Results

		Percentage Above (Below) Median		
	Size Effect	*No Program*	*Mediation Program*	*Percentage Increase (Decrease)*
School climate	.441	28	72	157
Perception conflict level	−.093	45.5	55.5	22
School records	−.285	36	64	68
Mediator knowledge	.530	23.5	76.5	225
Ability to follow steps	.495	25	75	200
Conflict resolution strategies	.410	30	70	133
View of conflict	.341	33	67	103
Academic achievement	.404	30	70	133
Self-esteem	.110	45	55	22

practice. Future research should address how the outcomes produced by the introduction of a program can best be realized.

On the basis of this study, it can be said that an important direction for future researchers would be to look at the degree to which student mediators used their intervention training outside of school settings. That is, do students use the problem-solving skills (active listening, question asking, reframing) in family and neighborhood interactions? The transference of conflict resolution skills extends into families and communities, presenting unique opportunities for young adults to potentially affect social change in family structures and in neighborhoods. Very few studies looked specifically at student skills in handling sibling conflict within family structures, but perhaps further monitoring of students could reflect long-term behavioral changes that pervade social networks of peers and neighbors. Learning how to manage conflict is a powerful resource for young adults to handle many of life's challenges, and the successful use of conflict resolution strategies continuously reinforces the value and benefit of constructive problem solving. Beyond providing relief for students, these skills can powerfully demonstrate to others involved in their interactions the positive effects of communication and negotiation efforts.

Another intriguing area for future research involves a question proposed by several researchers in trying to measure changes in student self-esteem and school climate as a result of mediation programs. American schools today, in general, enjoy an all-time low level of school violence. Is

there a connection between the introduction of school-based mediation programs and a reduction in school violence? Is there a significant difference between schools with and without mediation programs that cannot be attributed to other socioeconomic or demographic factors?

Looking at self-esteem, several studies noted anecdotal data about increased self-esteem among student participants trained in mediation programs, particularly among those mediators who themselves had behavioral problems and frequent episodes of conflict at school. Since no hard data exist to determine conclusively whether at-risk students benefit more than non-at-risk students from training on conflict resolution skills, studies that determine the effectiveness of targeted training interventions can help schools achieve even greater gains in improving school climates and mediation satisfaction, particularly by enriching the lives of at-risk students.

Finally, our challenge in the next decade is to conduct useful research validating school-based mediation and curriculum-based conflict resolution programs. Data from the Comprehensive Peer Mediation Evaluation Project (CPMEP) indicates that using peer mediation reduces conflict and aggressiveness and increases prosocial values, conflict competence, and perspective taking (Jones, 1998). Educators are charged with helping students develop their academic skills, but facilitating students' emotional intelligence is equally essential to their success in the world. Clearly, our goal as scholars and researchers is to persuade school policy makers and decision makers that conflict resolution education is in everyone's best interest through well-framed empirical research and curriculum development.

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