

RESEARCH ARTICLE

Comparison of the effectiveness of two forms of the *Enhancing Relationships in School Communities* program for promoting cooperative conflict resolution education in Australian primary schools

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Abstract

This study evaluated the *Enhancing Relationships in School Communities (ERIS) Project* which promotes constructive conflict resolution (CR) in Australian primary school communities through professional development for core teams of 3-5 staff ($n = 33$ teachers). Twelve schools were randomly assigned to a full intervention (FI) or a partial intervention (PI) group with 7 and 2 days professional development respectively and equivalent levels of in-school support over 16 months. Teachers from the same schools who received no direct intervention (NDI) ($n = 33$) were comparison groups. Qualitative and quantitative outcomes were reported. Teacher post-program reports and descriptions of program implementation suggested schools found the program useful. Significant positive differences were found between the FI teachers and the PI and NDI participants in their use of CR steps and of an integrative approach to conflict. At post-intervention FI group participants' attitudes to conflict became most positive. While both FI and PI participants disseminated CR information to staff and students, the FI group reported higher levels of dissemination.

Key words: conflict, professional development, elementary schools, primary schools, problem solving, relationships, conflict resolution

Comparison of the effectiveness of two forms of the *Enhancing Relationships in School Communities* program for promoting cooperative conflict resolution education in Australian primary schools

Given that school communities comprise students, staff and parents with differing values, interests and cultures, conflict can be viewed as an inevitable part of a school community's life. While the promotion of more effective approaches for managing conflict in school communities is highly desirable, the actual implementation and maintenance of new initiatives in schools are often fraught with difficulty (Elias, Bruene-Butler, Blum, and Schuyler 2000; Miller and Leyden 1999) and have had a history of failure (Fullan 2004; Walker 2004). External mandates and policies do not necessarily bring about school change or guarantee that these initiatives will reach the classroom or translate into teacher behaviour change (Han and Weiss 2005). In addition, while school-based conflict resolution programs are generally very well received initially, they are often not sustained (Deutsch et al. 2006; Johnson, Johnson, and Dudley 1992).

The study described here, therefore, aimed to investigate a school-based relationship enhancement intervention founded on cooperative conflict resolution principles, which incorporated factors proposed to facilitate long-term change in schools. Schools were provided with professional development in conflict resolution for core teams of staff, ongoing support through school consultation visits, and resources for student curriculum and staff professional development over a 16 month period. Two professional development formats of varying duration were delivered to three to five person core teams of school staff, and the outcomes of these two formats were compared.

Approaches to Conflict Resolution

The professional development program was based on research and theory which suggests that one can optimize positive outcomes of conflict by taking a *cooperative*, as opposed to *competitive* (distributive), approach (Deutsch et al. 2006; Spangle and Isenbart 2003). In competitive, or zero-sum, approaches parties view negotiation as a problem of distributing a finite resource between them (Spangle and Isenbart 2003), a view that fosters competition and perceptions of the other party as different and unjustified in their aims or interests (Deutsch et al. 2006; Wertheim, Love, Peck, and Littlefield 2006). Competitive approaches generally result in strategies of *avoiding* (no response), *forcing* the other to give in, *conceding*, or *compromising* (i.e., conceding some and gaining some) (Johnson and Johnson 2001; Stevahn, Johnson, Johnson, and Schultz 2002). A more constructive approach to conflict is proposed to be cooperative problem-solving, involving an *interest-based* or *integrative* approach, in which conflict is viewed as an opportunity to work together to solve a joint problem with the aim of finding a *win-win* solution (Deutsch et al. 2006; Fisher and Ury 1981; Wertheim et al. 2006) that integrates all parties' needs and concerns.

Outcomes of Conflict Resolution Programs

Conflict resolution (CR) programs which teach a cooperative integrative approach have been developed, implemented and evaluated as useful in various contexts (Coleman and Lim 2001; Johnson and Johnson 2001; Wertheim et al. 2006), including in elementary schools (Johnson et al. 1992; Johnson, Johnson, Dudley, and Acikgoz 1994) and high schools (Johnson, Johnson, Dudley, Mitchell, and Fredrickson 1997; Stevahn et

al. 2002). Workshops for adults taught a conflict resolution model have also been found to achieve successful outcomes (Davidson and Versluys 1999; Feeney and Davidson 1996).

Most of these studies, however, have been conducted under ideal conditions, either in laboratory type (Davidson and Versluys 1999; Feeney and Davidson 1996) or school settings, and delivered to students by researchers who had high skill levels (Johnson et al. 1994; Johnson et al. 1997; Stevahn et al. 2002). Therefore, the next step in bringing this approach to school communities is to move beyond demonstrating the efficacy of the approach to finding effective methods for integrating cooperative conflict handling approaches into schools under real world conditions (Walker 2004).

Effectiveness research in education suggests that a variety of factors facilitate implementation and maintenance of new initiatives in schools, including the program being seen by the school as relevant and as fostering mutual respect among students (Fullan 2004; Gager and Elias 1997); teachers having a personal commitment to the program (Ishler, Johnson, and Johnson 1998); and the program being congruent with goals of the school and broader educational systems (Gager and Elias 1997; Han and Weiss 2005). Other factors include support from school leadership (Gager and Elias 1997; Han and Weiss 2005) and the formation of professional learning teams, or 'core' teams, to implement new approaches (Gager and Elias 1997; Ishler et al. 1998). Teachers having a sense of ownership of the initiative, being involved in all stages of the planning, and having the flexibility and support to adapt the initiative to the needs of the school, have also been highlighted (Everhart and Wandersman 2000; Gager and Elias 1997; Ringeisen, Henderson, and Hoagwood 2003). Studies of conflict resolution programs have also identified that a positive attitude towards conflict promotes teacher implementation of CR programs in schools (Miller and Leyden 1999; Smith, Daunic, Miller, and Robinson 2002; Thorsen-Spano 1996).

Many of these facilitating factors were put into practice by Stevahn, Munger and Kealey (2005) in implementing a conflict resolution program delivered by classroom teachers to all students in an elementary school. The intervention resulted in

improvements in the students' learning and use of the conflict procedure. The authors suggested several further factors they believed had facilitated implementation of CR in the classroom, including continuing collaboration amongst staff as they implemented their CR training; an ongoing, school-wide focus; staff and students having a shared knowledge of the same conflict resolution procedure; and teachers' integration of CR with other curricula.

However, implementation of Stevahn and colleagues' (2005) program by teachers in the classroom was only moderate to low which the authors suggested may have been due to limited opportunity for staff training (2 hours and six classroom demonstration lessons spread throughout the school). The need for adequate professional development for school staff has been endorsed by other researchers, who argue that teachers are often offered too little in the way of preparation and support, and that the needs of adult learners tend to be neglected (Elias, Zins, Craczyk, and Weissberg 2003; Jones and Compton 2003; Walker 2004). It has been argued that staff need sufficient time to thoroughly integrate new skills and attitudes (Freeman, Strong, Cahill, Wyn, and Shaw 2003; Labaree 2003), especially in the area of conflict management where teachers may need support in developing skills for resolving their own conflicts and mediating students' disputes before they can teach students effectively (Raider 1995).

Unfortunately, little is known about the effectiveness of staff professional development programs, how much professional development support is optimal and the extent to which what is taught is transferred into daily practice and maintained over time (Ishler et al. 1998). Few studies examine in a controlled manner differing approaches to professional development to uncover conditions that best support effective training and implementation (Coleman and Lim 2001).

The current study

The current study had a dual focus. A first aim was to evaluate the outcomes of the *Enhancing Relationships in School Communities (ERIS) Project*, which was designed

to promote creative and constructive approaches to conflict in primary school communities. A second aim was to examine differences in project outcomes depending on the extent of professional development offered. Two formats were compared: a 'full' program, which was expected to yield most benefits, and a 'partial' program which was expected to yield lesser benefits. Many of the factors identified as supporting the implementation and maintenance of initiatives in schools were used in developing the project. Over a 16-month period core teams of school staff (3 to 5 staff per school) were supported through professional development in learning an integrative conflict resolution model and applying it in their school (Wertheim, Freeman, Trinder and Sanson 2006). The 'partial' form of the program was designed to parallel standard professional development programs that are common practice, in which participants attend two days of professional development focusing on theory and skills training. This standard format was compared to a more extended 'full' version of the program comprising seven days of professional development. Given previous findings indicating that brief interventions show little implementation and maintenance in schools, it was expected that the full intervention program would be more effective than the partial program. Non-participating teachers from the schools served as further comparison groups, enabling assessment of the extent of transfer of learning about CR from those directly participating to the wider staff group.

The primary hypotheses were that: (1) from pre- to post- program teachers from schools participating in the ERIS program would increase their use of the steps of a conflict resolution model, develop a more positive attitude to conflict, and use a more cooperative/integrative approach to conflict; and that these positive changes would be most evident in staff participating directly (attending workshops) in the full version of the professional development program, and least evident in the staff who were non-direct participants (not attending workshops) in the partial intervention schools; and (2) the full intervention schools would report greater priority, effect and implementation of the ERIS program in their school, including reporting more hours of ERIS-related curriculum being taught.

Method

Participants

Twelve primary schools comprising grades preparatory to 6 (i.e., students aged 5 to 12 years old) from a range of socioeconomic (SES) suburbs (clustered towards the lower end) in Northern or Western Melbourne (Australia) participated. School size ranged from 166 to 610 students ($M = 331.58$, $SD = 152.46$) with staff numbers ranging from 15 to 51 ($M = 27.9$, $SD = 11.89$). Sixty-six staff from these schools participated in the full evaluation (57 females, 9 males), comprising a full intervention (FI) group ($n = 16$), partial intervention (PI) group ($n = 17$), no direct intervention group from full intervention schools (NDI-FI) ($n = 14$), and no direct intervention group from partial intervention schools (NDI-PI) ($n = 19$). Age ranged from 22 to 61 years ($M = 40.10$, $SD = 9.10$). Most participants (91%) were born in Australia.

Schools sent a three to five person 'core team', including representatives from both leadership (principals/assistant principals/leading teachers) and classroom/specialist teachers, to take part in the 16 month ERIS program. The program required participant attendance at professional development sessions; completion of between-workshop activities; meeting regularly as a team; and implementing at least two conflict resolution programs in their school. Schools were matched on size and SES then randomly assigned to one of two groups: the full intervention group (core team attending 7 full-day workshops over the 16 months and receiving 4 in-school visits by the ERIS coordinator) or the partial intervention group (core team attending the first two sessions and receiving the 4 in-school support visits). Staff who did not participate in the core teams volunteered to participate as NDI comparison groups.

The Program

All core teams attended the initial two days of professional development (3-4 weeks apart), in which participants learned a conflict resolution model (see Figure 1; Wertheim, et al. 2006), which had been originally based on concepts from the Harvard Negotiation Project (Fisher and Ury 1981) and other conflict resolution theorists (see Littlefield, Love, Peck, and Wertheim 1993 for a description of the foundations of the model). The model identifies the issues (i.e., topics) in a conflict, and who the relevant parties and secondary actors might be. Based on Deutsch's (1973) research, which stresses the benefits of a cooperative versus competitive approach, parties to a conflict are encouraged to consider how to 'set the stage' for cooperation and win-win outcomes through explicit statements such as 'If we work together I am sure we can find a way to meet everyone's needs here'. Parties then move from focusing on each person's *position* (advocated initial solution to the problem) and instead ask about and consider all parties' *interests* (wants, needs, fears, concerns) that are behind the positions (as discussed by Fisher and Ury, 1981). When everyone's interests are understood, parties brainstorm a range of options that can meet those interests and combine the best options into 'win-win solutions' meeting everyone's needs. While a less core part of the model when teaching the ideas to students, the full model also included Fisher and Ury's concept of the BATNA (best alternative to a negotiated agreement), which involves finding ways to meet one's own interests without the cooperation of the other party (of use if negotiations break down). The model addresses the importance of relationship building and emotion management strategies (e.g., calming self talk which is planned ahead).

Participants learned ways to apply the model to a variety of school scenarios such as managing conflict between students in the classroom and the playground, and dealing with staff-student and staff-parent conflict. The model's potential to provide a more effective way to manage conflict or differences of opinion among staff (for example at staff meetings) was considered.

Teachers were taught to identify specific skills students need to resolve conflict using a 'skills ladder' checklist (Trinder and Wertheim 2007). Preliminary skills on the ladder included containing/managing emotions; verbalizing feelings and thoughts; and empathy skills. Higher on the ladder were the conflict-specific skills of setting the scene for cooperation, identifying interests, brainstorming, and developing and negotiating win-win solutions. Teachers were encouraged to use the checklist to rate students' skill levels (although this data was not collected by the researchers) and use the information to inform their teaching.

To help participating teachers learn the skills in a meaningful way, they identified a current real life conflict (such as with another teacher, student, personal friend, or family member); and wrote a plan for addressing the conflict, which involved analyzing the conflict according to the conflict model, and preparing a process plan, including what they would do and say and how potential interaction difficulties could be handled. After receiving feedback on the plan from the ERIS research team, they carried out the negotiation and wrote a report reflecting on the effectiveness of the process. The partial intervention group also had some time to consider implementation issues.

(Figure 1)

During the 16 months of the program, all schools received four visits by the ERIS coordinator, during which core teams identified and planned ways to tackle conflict-related issues their school wanted to address. Schools were provided with a conflict resolution curriculum called '*Wise Ways to Win*' based on a children's book of the same name (Australian Psychological Society 1997) and Wertheim et al. (2006) which covered the key phases of the model used, including setting the stage for cooperation and aiming for a win-win solution, examining interests of the parties, brainstorming creative options, then finding a win-win solution. Schools were also given access to resources to conduct professional development for staff (e.g., PowerPoint presentation slides, DVD of a teacher negotiating with a parent using the steps of the model).

FI participants attended five additional days of professional development, covering the conflict resolution model in more detail : how to apply the ideas during student conflict in different roles (encouraging roles of mediator or ‘coach’, as opposed to arbitrator); how to use the ideas during parent-teacher negotiations; how change processes in schools work; promoting new approaches in the school community; addressing issues of cultural diversity in the school community; and teaching a cultural diversity curriculum. FI participants also had the opportunity to learn from each other by presenting their school’s locally developed ERIS strategies during the professional development sessions. The first three authors, with expertise in psychology, conflict resolution, mediation, cultural diversity and school teaching, presented the workshops.

Measures

Negotiation Conflict Scenario.

Two counterbalanced parallel versions of scenarios describing a teacher-student conflict were presented . These scenarios included teacher-student conflicts such as a student refusing to participate in a physical education lesson; refusing to hand in homework; constantly being late for class or continually talking during class while the teacher is talking. Participants were asked to write about what they would do to resolve the conflict (adapted from Stevahn et al. 2002) and to list all the steps they would take. Responses to the scenarios were rated in two ways as follows:

Use of the CRM Scale assessed the presence of components of the Conflict Resolution Model (i.e., setting the stage, identifying interests (your own and others’), brainstorming options, evaluating options and building options into a win-win solution) (Wertheim, Love, Peck, and Littlefield 1998), which were rated (blind to condition) as *no* (0), *moderate* (1) or *ideal* (2) application of the component. Scores for each component were summed to form a *Use of the CRM* scale. Cronbach’s α was .77. Inter-rater reliability (blind as to condition) based on 20% of the items was good, with Cohen’s weighted kappa average of .75 and percentage agreement ranging from 78% to 100% (Viera and Garrett 2005).

A Conflict Strategy Scale (CSS) was adapted from the Conflict Strategies Theory Scale (CSTS) (adapted from Stevahn et al. 2002). Participant responses to the scenario were categorised as either an integrative (aimed at win-win problem solving) approach or win-lose (no response, forces, withdraws, smooths, compromises) approach. The original CSTS has shown predictive validity (Johnson and Johnson 2001). In the current study, inter-rater reliability (blind) on 20% of items for the CSS showed good agreement, with a Cohen's weighted kappa average of .71.

Attitude Towards Conflict Measure.

The conflict-word-association measure assessed attitude towards conflict (Dudley, Johnson, and Johnson 1996; Stevahn et al. 2002). Teachers wrote down the words that come to mind when they think of conflict. Responses were categorised as: *positive* (reflecting constructive conflict resolution), *negative* (reflecting destructive conflict resolution), *unbiased conflict definitions* (e.g., incompatible goals, disputes, different wants/ needs), and (4) *neutral*. Percentage of total number of words was calculated for each category. Inter-rater weighted kappa = .89, agreement = 96%.

Post-program Evaluation.

The *ERIS Program Impact Scale* (9 items) involved participants rating from 1 (*not at all*) to 5 (*very much so*) how much the program helped them develop a range of skills and confidence in managing conflict with staff, parents and students. Cronbach's α was .98. Staff also rated on the same scale the level of priority that ERIS had in their school. Core team participants indicated the number of hours spent delivering ERIS professional development for staff and teaching ERIS curriculum, and whether ERIS information was disseminated to parents/families. An open ended question asked teachers to describe any classroom changes they attributed to school participation in ERIS.

Information from school visits.

During school visits, the ERIS coordinator met with core teams and gathered information about formal meetings of the core team between coordinator visits; involvement of the principal; membership on relevant school committees; inclusion of

ERIS in school policy and practice; hours of delivery of professional development to colleagues; dissemination of information about the ERIS project to parents/families (each categorized into yes/no responses) and number of hours teachers throughout the school taught the ERIS curriculum.

Procedure

University Human Research Ethics Committee and school system approvals were obtained. School eligibility for the ERIS Project required principals to confirm that at least 80% of their staff supported participation and to commit to: forming a core ERIS team of 3-5 staff; providing opportunities for dissemination of ERIS information to the school community; and providing teacher replacement costs for attendance at professional development sessions. Participating staff needed to commit to: attending seven professional development sessions over two years; intending to remain at the school for 16 months; completing between-training activities; meeting regularly with their team; and implementing at least two conflict resolution programs during the program.

Once accepted, each school received a visit from the ERIS coordinator to discuss the program. Members of core teams were sent information, consent forms and questionnaires. Principals were sent information sheets, consent forms and questionnaires for inviting staff who would not be attending the professional development sessions. Consenting staff formed the NDI groups. Participants received code numbered questionnaires (for confidentiality) and individual reply paid envelopes. Questionnaires were completed at pre intervention and post intervention (and two midpoints not reported on here).

Pre and post questionnaires were completed by 66 (out of 116 initial) participants (57%). Reasons for attrition were: 20 staff left their schools and 5 formally withdrew from the intervention (due to work/personal commitments). A further 25 failed to complete post intervention questionnaires (2 FI, 2 PI, 5 NDI-FI and 16 NDI-PI

participants). The drop in the NDI-PI group may have resulted from two schools providing time at staff meetings for questionnaire completion at pre-, but not at post-, intervention.

Data analyses

Qualitative findings will be presented first. These are based on field visits and on the open-ended questions in the post-program evaluations. Examples of two schools' implementation of the program are given.

For quantitative analyses, a significance (alpha) level of .05 was used because a small sample size reduces the likelihood of significant findings for many analyses. Since the data was not normally distributed, even after attempting transformations, nonparametric tests were used. The four groups were compared on continuous variables using Kruskal Wallis tests (with Mann-Whitney U post hoc tests) and on categorical variables with chi-square tests. To examine differences between pre- and post-intervention for each group, Wilcoxon Signed Ranks Tests were used. While non-parametric analyses were conducted, in order to approximate effect size, values for eta squared were calculated using ANOVA: .01 = small effect, .06 = moderate effect, .14 = large effect (Pallant 2001).

Results

Information from School Visits

Patterns of activity within the schools.

Figure 1 represents patterns of reported ERIS activities, based on information collected during school visits. While significance tests were precluded due to small numbers of schools, on visual inspection the full intervention core teams (compared to partial intervention core teams) reported their schools engaged in more school-wide ERIS activities, including relevant school meetings, professional development in the school,

principal involvement, integrating ERIS into policy and practice, core ERIS team members serving on relevant committees, and disseminating ERIS information to parents.

Percentage of classes in school teaching CR.

Field notes indicated that for full intervention schools, 25% of classes included ERIS CR curriculum in the first year, increasing to 36% in the second half year, while for the partial intervention schools 20% taught ERIS curriculum in the first year, dropping to 11% in the second half year. Mean hours taught were FI = 25.2 hours (SD=14.97) and PI = 20.1 hours (SD = 8.91) in the first year and FI = 35.67 hours (SD = 45.38) and PI = 10.5 hours (SD = 16.29) in the second half-year (total hours for FI = 60.9, for PI = 30.6).

Qualitative data on school outcomes.

Each school was encouraged to apply the program to meet their specific needs, leading to a variety of applications and levels of engagement in the program. Schools with greater senior leadership (principal) involvement in the core team appeared to achieve the best whole-school outcomes (Wertheim, et al. 2006). Two examples of how schools reported implementing the program follow.

During one ERIS workshop, full program school teams practised using the conflict resolution model to ‘problem solve’ a relevant local school issue. One school with active principal involvement chose to address the high levels of conflict in the playground which staff were required to manage while on ‘yard duty’ (playground time). The school formed a Staff and Student Wellbeing Committee that met every 2-3 weeks and had a whole staff debriefing every 5 weeks. The Committee tracked yard duty incidents and instituted a range of changes that included: the core team teaching all staff about the ERIS conflict resolution model; team teaching the *Wise Ways to Win* curriculum to all students; keeping a copy of the conflict resolution model on hand for use on yard duty to manage incidents; documenting each incident; and developing engaging activities for students during break times. During this process, staff became more aware that students required *support* to develop essential skills to effectively

resolve conflict, reflecting the ERIS curriculum and skills ladder. The school integrated *cooperative* conflict resolution principles into the curriculum and sought to embed the principles into their school ethos. The school's documentation of yard duty incidents indicated that conflict incidents progressively reduced from an initial 198 incidents in Semester 1, 2005, to 50 incidents in that semester two years later (2007).

At another ERIS school, with lower levels of conflict and aggression in the playground, staff were still very concerned by students' lack of skills in managing conflict. This school prioritized skilling their staff in the conflict resolution model and allocated every second staff meeting for a term to professional learning in conflict resolution. Members of this ERIS core team developed ERIS-related professional learning to suit their school's needs. The principal reported that by identifying and responding to staff needs, the ERIS core team assisted other staff to develop greater confidence in teaching the *Wise Ways to Win* curriculum, which was then taught to students. Teaching the ERIS model to staff and students also enabled consistency throughout the school in the way conflict was managed including in playground supervision. The ERIS project was regularly reported in the school newsletter and a parent information session enabled parents to understand the school's approach to conflict resolution and the ideas that their children were bringing home from school.

Teacher reports of changes attributed to the ERIS program.

At post program, teachers described classroom changes attributed to the ERIS program. Teachers reported applying the ideas in classroom interactions, 'circle time', and when addressing discipline issues. Examples of changes teachers reported about themselves included, "I use the CR model to resolve issues with my students", "better listener to children and ability to solve issues", "open discussion about conflict and brainstorming", "spending more time involving the children in resolving conflicts", "more discussion of problems and ways to resolve them positively - open forum", and "teachers are taking more responsibility for discipline".

Teachers also described student-related changes: “children clearly recognize that I *want* to help them”, “children are more willing to discuss issues”, “students are more willing to listen to each other’s viewpoints and try to resolve it in a fair way that has benefits for all”, “children look for a win-win solution a lot of the time”, “the children don’t come to me to solve their problems as often. They usually sort them out and let me know of their resolution”, “children are more inclined to be more assertive and try to solve their own problems. Not as much dobbing [i.e., tattling] and telling the teacher”, and “this school is peaceable [post program]. Rarely do you see physical aggression”.

In field visits, teachers also reported on process lessons learned. This included that the students needed plenty of practice to learn to use the conflict resolution ideas, not just through the curriculum but through using it in vivo as problems arose. They also reported that students often needed to work on the foundation skills of developing a feelings vocabulary, empathy building and perspective taking; and initially teachers needed to play an active role in walking the students through the conflict resolution process including offering suggested possible needs and wants and options.

Preliminary Quantitative Analyses

Pre intervention differences.

Attrition analyses comparing groups which did or did not complete post-intervention measures using Mann-Whitney U and chi-square tests indicated no significant differences on any of the dependent variables ($p > .15$). Kruskal-Wallis tests on the final sample ($N = 66$) with complete data revealed pre-program group differences only for CRM steps $H(3, N = 65) = 12.51, p = .006$ (NDI-PI significantly higher than the other 3 groups) and for positive conflict words $H \chi^2(3, N = 66) = 8.18, p = .04$ (NDI-FI significantly higher than the other 3 groups). Analyses for these two variables were therefore conducted using residualised change scores.

Changes in Staff Skills, Approaches and Attitude

Use of steps of the Conflict Resolution Model (CRM).

Significant improvements were found in use of CRM for three of the four groups over time: FI group $Z(16) = -3.43, p = .001, \text{partial } \eta^2 = 0.76$; PI group $Z(17) = -3.40, p = .001, \text{partial } \eta^2 = 0.47$; the NDI-FI group, $Z(13) = -2.92, p = .004, \text{partial } \eta^2 = 0.48$; but not for the NDI-PI group. A Kruskal-Wallis Test also indicated group differences post intervention between the four groups $H \chi^2(3, N = 63) = 12.92, p = .005$, with the FI group reporting using significantly more steps of the CRM than the other three groups: PI group $Z(17) = -2.40, p = .016, \eta^2 = 0.19$; NDI-FI, $Z(13) = -2.30, p = .021, \eta^2 = 0.19$; and NDI-PI, $Z(17) = -3.07, p = .002, \eta^2 = 0.19$; effect sizes were large. The other three groups did not differ significantly.

Conflict Strategies Scale.

Statistical assessment of within-group changes in conflict strategy use over time was not possible due to the categorical nature of this data and small sample size. However, visual inspection of results showed the largest improvement in use of an integrative approach (i.e., seeking a solution that met the needs of all parties through joint problem solving, rather than yielding or contending) for the FI group (pre = 12.5%, post = 75%), next was the PI group (12.5%, 41.2%) followed by the NDI-FI (0%, 23.1%). Least improvement was found for the NDI-PI group (11.1%, 23.5%).

Regarding between group differences, the groups did not differ in use of integrative negotiation style at pre-program $\chi^2(3, N = 64) = 1.88, p = .60$, but they did at post program, $\chi^2(3, N = 63) = 11.49, p = .009$, with significantly more full intervention group members using an integrative style than members of the other groups: partial intervention group $\chi^2(1, n = 33) = 3.86, p = .049$; NDI-FI $\chi^2(1, n = 29) = 7.74, p = .005$; and NDI-PI $\chi^2(1, n = 33) = 8.74, p = .003$. No other groups differed.

Positive words associated with 'conflict'.

There was a significant increase in use of positive words (e.g., assertiveness, change, growth, listening, negotiation, openness, options, opportunity, problem solving, and relationships) for the full intervention group only, $Z(17) = -2.42$, $p = .015$, $partial \eta^2 = .11$ (moderate effect). A Kruskal-Wallis Test using residualised change scores indicated a significant difference between the four groups, $H(3, N = 64) = 8.18$, $p = .042$, reflecting that the full intervention group increased in use of positive words more than the NDI-PI group $Z(34) = -2.63$, $p = .008$, $\eta^2 = .11$ (large effect size). There were no significant differences between any of the other three groups (Table 1 shows means).

(Table 1)

Negative words associated with 'conflict'.

The full and partial intervention groups used significantly fewer negative words (e.g., angry, arguments, blame, destructive, fear, fights, hate, hitting, hurts, war, yelling, silence, racism, injustice, payback, prejudice) over time: full intervention group, $Z(16) = -2.33$, $p = .02$, $partial \eta^2 = .34$; partial intervention, $Z(16) = -2.15$, $p = .032$, $partial \eta^2 = .29$. The NDI groups showed no significant change over time. A Kruskal-Wallis Test, $H \chi^2(3, N = 64) = 11.53$, $p = .009$, using residualised change scores was significant, reflecting that at post-intervention the NDI-PI changed significantly less than the full intervention group, $Z(34) = 2.58$, $p = .01$, $\eta^2 = .205$; partial intervention group, $Z(34) = 2.28$, $p = .023$, $\eta^2 = .205$; and NDI-FI, $Z(32) = 2.77$, $p = .006$, $\eta^2 = .205$. The other groups did not differ significantly (see Table 1).

School results at end of intervention

Professional development offered to staff.

Full intervention participants ($n = 16$) reported offering significantly more professional development to their staff (mean = 5.72 hours, $SD = 5.1$) than did partial intervention participants ($n = 16$) (mean = 2.15 hours, $SD = 2.49$); $Z(33) = -2.29$, $p = .02$, $\eta^2 = .18$ (large effect size). Professional development was implemented in schools by

core teams through staff meeting time devoted to the ERIS project. Staff meeting activities included teaching other staff about the conflict resolution model or skills ladder; showing the video of the conflict model in practice; and introducing the *Wise Ways to Win* curriculum.

Curriculum taught to students

The mean number of hours of ERIS CR curriculum reportedly taught to students ranged from 14.3 to 27 hours over the final six months of the first year of the intervention and the first six months of the second year, with the four groups differing significantly, $H \chi^2 (3, N = 62) = 8.09, p = .044$. The full intervention group taught significantly more CR curriculum (mean of 27 hours) than both the partial intervention group $Z (31) = -2.09, p = .037, \eta^2 = .06$, and the NDI-PI, $Z (34) = -2.74, p = .006, \eta^2 = .06$, but not the NDI FI group (see Table 2).

(Table 2)

ERIS Program Impact Scale.

Significant differences between groups were found on impact of ERIS on conflict handling at post-intervention, $H \chi^2 (3, N = 61) = 22.67, p < .0005$; the full intervention group reported finding the ERIS project more helpful than the NDI-FI group, $Z (29) = -2.52, p = .012, \eta^2 = .43$; and the NDI-PI group, $Z (32) = -4.05, p = .000, \eta^2 = .43$. There was also a significant difference between the partial intervention group and the NDI-PI group, $Z (32) = -3.80, p = .000, \eta^2 = .43$. There were no other significant group differences (see Table 2).

Level of priority of ERIS.

The groups differed significantly on the question of “How high a priority has ERIS been in your school?” $H \chi^2 (3, N = 61) = 13.73, p = .003$, with the full intervention group scoring significantly higher than the partial intervention group, $Z (32) = -2.06, p = .04, \eta^2 = .22$, and the NDI-PI group, $Z (31) = -3.24, p = .001, \eta^2 = .22$. The NDI-FI group

also indicated ERIS was a higher priority than the NDI-PI, $Z(29) = -2.78, p = .005, \eta^2 = .22$. Effect sizes were large.

Discussion

The current study aimed to examine the effectiveness of the ERIS program in (1) assisting primary school staff to approach conflict as an opportunity for constructive and integrative problem solving and (2) enabling staff to disseminate what they had learned to their school community. An extended (full) and a limited (partial) 16-month professional development intervention were implemented to ascertain how effective the two formats were in producing changes for staff directly involved in the professional development and how well learning was disseminated throughout the schools. Overall, the results supported the hypotheses that the full intervention would result in greater increases in application of conflict resolution skills, use of an integrative approach instead of contending, avoiding, yielding or compromising, and a more constructive approach to conflict, as well as having a more substantial impact on the management of conflict within the school communities. There was partial support for the hypothesis that all the groups which received professional development (including the no direct intervention groups who received school-based PD delivered by the ERIS core team) would show increases in application of conflict resolution skills, use of an integrative approach and a more positive attitude over the 16 months of the project.

Impact of the Different Interventions

Before participating in the ERIS project, participants generally perceived conflict negatively (about 65% of words on a word association measure). By post program, both the full and partial intervention groups (core teams) showed a significant decrease in the

use of negative words associated with conflict (e.g., anger, fighting, fear); while no such changes were found for either of the non-direct groups, and at post program the NDI-PI group used more negative words than the other three groups. In addition, at post program the full intervention group, but not the other groups, had more positive associations with conflict suggesting that they associated conflict with constructive conflict processes and outcomes such as change, opportunity and problem solving. Developing a more positive attitude towards conflict has been found in previous research to be associated with a more integrative approach (Fisher and Ury 1981) and also the implementation of CR programs in schools (Miller and Leyden 1999; Smith et al. 2002; Thorsen-Spano 1996).

In relation to skills change, three of the four groups showed a significant improvement in their use of steps of the conflict resolution model (CRM) from pre to post program. At pre-program, few teachers reported that when handling student conflict they would make explicit statements to enhance cooperation, consider all parties interests, and brainstorm a range of options to generate a win-win solution. By post program participants were more likely to report that they would use these strategies. These positive changes were most obvious in the full intervention group, with only the non-direct partial intervention group showing no significant improvement in this area.

Similarly, when measured in terms of conflict styles, initially only 10% of teachers reported using an integrative approach when managing a problem with a student, suggesting that in general integrative problem solving is not widely used in schools in this context, and instead approaches to conflict tend to be less constructive (e.g., avoiding, forcing, withdrawing, smoothing, compromising). Although not tested for significance, the greatest post-program improvement in use of an integrative approach was for the FI group (63% changed from a non-integrative to an integrative approach), followed by the partial intervention group (29%), the NDI-FI group (23%) and finally the NDI-PI group (12 %).

From these findings it appears that full and partial programs had benefits in supporting staff to increase understanding of an integrative conflict resolution model and to view conflict less negatively. In addition, the full program core teams appeared to

receive most benefits from the program, and least benefits appeared to be received by non-participant staff members in the partial program schools.

Potential Benefits of the Conflict Resolution Model

Improvement in integrative problem solving and use of steps of the CRM are likely to have benefits. Previous Australian research found that those who used more steps of the CRM had more successful outcomes when negotiating conflict and that even when only one person in a dyad involved in a conflict was skilled in using a CRM there was a more positive outcome than if neither had learned the skills (Davidson and Versluys 1999; Feeney and Davidson 1996). Therefore staff with these skills may be more likely to negotiate positive outcomes to conflicts, which would benefit the school community. Indeed, at post program many teachers indicated that the ERIS program had helped their students become more open to listening to other viewpoints, proactive in resolving conflict, and able to solve interpersonal problems more constructively.

An integrative problem-solving approach also has potential benefits for teacher relationships in the school community. As one teacher described in her negotiation exercise process report, these negotiations "...work because all parties feel they have been heard – this is an important factor for school relationships as children often don't feel they are being heard by teachers, who can and often do - dominate discussions and conflict resolutions. Parents in school communities often feel intimidated by teachers and the principal because of their positions – but with this type of negotiation, the intimidation dissolves and everyone is on equal footing for open discussion and dialogue – aiming of course for a win-win situation."

Further Impact of the Different Interventions on Schools

In relation to the effectiveness of the ERIS project in impacting on the school community, core teams from both full and partial programs reported conducting professional development for staff and teaching ERIS CR curriculum to students.

However, the full, compared to the partial, intervention format led to core teams delivering more professional development and teaching more ERIS CR curriculum to students.

In relation to reported impact of the program, both the full and partial program core teams indicated that the ERIS project had been a significantly greater help to them in learning to manage school-based negotiations with students, staff and parents, than the NDI-PI group. A significant difference was also found on this scale between the full intervention and NDI-FI participants.

The design of the current study used same-school NDI participants (teachers in the same school as the core teams) as comparison groups, rather than using 'pure' control groups. This allowed assessment of program diffusion throughout the schools. For all of the variables measured, the NDI-PI group (for which the core team of that school only participated in two workshops) was the only one that showed no significant changes on any of the measures. This suggests that the small quantity of professional development this group received from their colleagues was not sufficient to impact on them in measurable ways.

What these findings suggest is that without prior training school staff generally use very few steps of a collaborative problem-solving model, have a negative attitude to conflict and predominantly use competitive rather than integrative approaches to managing conflict. The findings suggest that participation in seven days of professional development (along with support visits) improved the skills, attitude and approach of staff most directly involved in professional development, and (when encouraged as part of the program) also led to greater dissemination of these learnings to other staff and students in their school communities.

The partial (two day) intervention was representative of the typical 1 or 2 day formats generally available to school staff while the full (7 day) format was guided by the recommendations in the literature for sustained professional development. Comparing the efficacy of these two formats, it was found that while both resulted in significant changes for participants, the full intervention had superior outcomes. Two days' training

appeared sufficient to enable staff to have improved procedural knowledge (steps of the CRM), a less negative attitude and more knowledge and skills in managing school-based negotiations. However, the additional 5 days offered better procedural knowledge (using significantly more steps of the CRM), significantly greater use of an integrative approach and a more constructive attitude towards conflict. These results suggest that if significant skill and attitudinal changes in teachers' approaches to conflict management are wanted, then two days of professional development, even with some support in the form of school consultation visits, may not be sufficient.

The patterns of information collected during school visits suggested other possible benefits of the full intervention compared to the partial intervention program. These included the core teams operating more independently, e.g., meeting of their own accord and initiating activities within the school (FI = 4, PI = 0), incorporating ERIS learnings into school policies and practices (FI = 5, PI = 2), becoming members on relevant school committees (FI = 5, PI = 2), and distributing more information to parents (FI = 4, PI = 2). The impact of these activities was evident in such outcomes as the development of a consistent approach to managing playground conflicts; the integration of ERIS topics into whole school curriculum; and the allocation of more staff meeting time for professional development in CR. It is important to note that, while these patterns appeared more often in the full rather than the partial intervention schools, there was diversity among the schools in each group. Replication with a larger sample is therefore needed.

Limitations, Strengths and Future Directions

Several limitations of this research should be noted, including the fact that there was some attrition of the sample (although much of this involved staff turnover in schools) and the pilot nature of the study, which requires replication with a larger sample. The project duration was constrained to 16 months because of funding limitations, so that final data collection occurred half way through the school year when some schools were just beginning their professional development with staff and many teachers were midway through teaching the ERIS CR curriculum. Therefore findings reported are probably

underestimates of school activity resulting from the ERIS project. Furthermore, the use of 'no direct intervention' groups from the same school was valuable for assessing dissemination but comparisons with 'pure' control groups from separate schools would be desirable in future research (although collecting detailed data from such groups when no service or benefit is being offered is challenging). Finally, the measures used in the current study included self-report measures and coding of participant responses to scenarios as a measure of CRM use and conflict strategy. While the latter measures are more objective than self-report, observational methods would be of use in future studies.

The length of the full ERIS program offered in this study could be seen as either a strength or a limitation of the study depending on perspective. Proposing a model of effective professional development that includes seven rather than two professional development days has substantial cost implications for schools and school systems. However, a useful question is whether ensuring staff have the necessary knowledge and skills to promote constructive conflict resolution schools is an expense or an investment. If shorter programs are not as effective in producing long-term implementation and maintenance of the program, then they may be seen as false economy. The Collaborative for Academic, Social and Emotional Learning (2007) has argued that embedding school-wide changes in areas including CR may take from 3 to 5 years, suggesting that to yield greater effectiveness, future ERIS programs should further extend the time period in which schools are supported.

As the ERIS project targeted change at the teacher level (based on the philosophy that teachers provide role models and resources for students), teacher change, the most proximal outcome (Schaughency and Ervin 2006), was evaluated. Future research should further examine change processes at the school and student levels to inform future professional development programs. It would be expected that there would be increased student knowledge of and use of CR skills; reduction in the incidence of conflict, disciplinary referrals and disruptive conflict; and improvements in classroom and school climate.

Areas worthy of future investigation are models of professional development

delivery that provide greater support for all staff in a school as well as using core teams to ensure implementation and maintenance within the school structure. The core team model has been supported in the literature on building school capacity for change (e.g., Bond, Glover, Godfrey, Butler and Patton 2001). However, improvements in the non-direct groups were not as high as one might hope, and suggest that even in the full-program intervention, diffusion within the school was not as extensive or effective as it could have been. Conflict management is an area that crosses the boundaries between the personal and the professional and as such may be more challenging than learning to implement more constrained material such as a new mathematics curriculum. While core teams did provide professional development for their school staff, the value of this work might be increased if it were supplemented by intensive expert-run professional development offered to the whole staff. Ideally, this sort of training would also form a standard part of teacher preparation programs, a point made strongly in research on the importance of social emotional learning in schools (Kassem 2002; Zins 2004).

Research on school-based interventions has indicated that the support of school leadership is also critical to the success of implementation (e.g., (Kam, Greenberg, and Walls 2003). Therefore in the ERIS project school involvement in the project required that school leaders were represented in the core team. The specific role of leaders in the implementation process and intervention outcomes, however, is worth further examination.

In summary, this study suggested that, sustained professional development in conflict resolution for core teams of seven days' duration resulted in better outcomes for both the individuals and schools, than did a more typical two-day intervention model. The ERIS Project encouraged school change at multiple levels including in policy and practice at classroom, playground, curriculum and parent levels. The study supports the usefulness of high quality, *sustained* professional development to enhance conflict resolution practices and curriculum in primary schools. It is hoped that these findings will serve to encourage a more universal uptake of sustained professional development approaches in the area of enhancing relationships in school communities.

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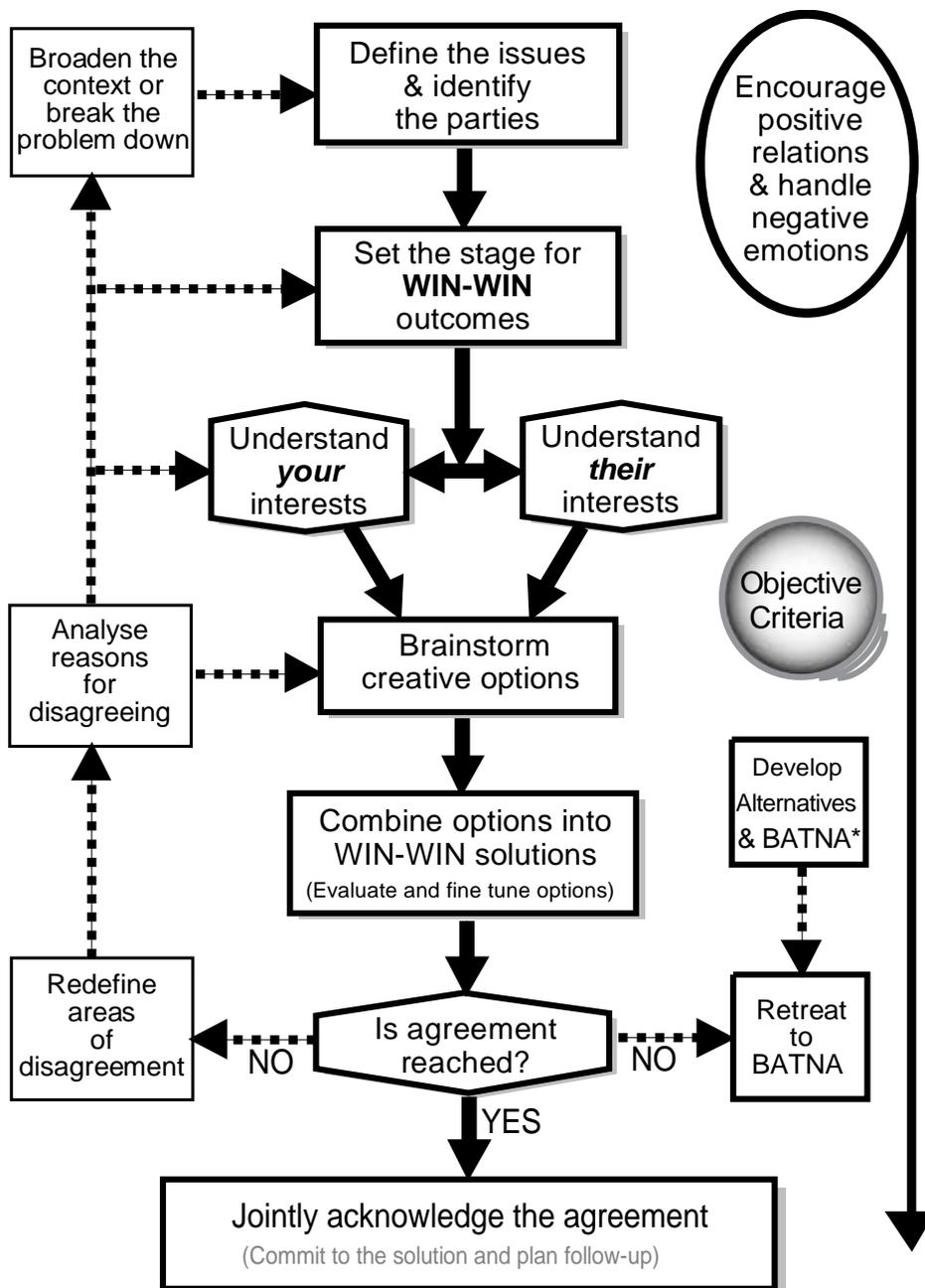


Figure 1. Conflict resolution model used as the basis of the ERIS program. Adapted with permission from Wertheim et al. (2006, 31).

*BATNA = Best Alternative to a Negotiated Agreement

Table 1.

Means (and Standard Deviations) at Pre-intervention and Post-intervention on the Key Outcome Variables for the Four Groups: Full intervention ($n = 16$), Partial intervention ($n=17$), No Direct Intervention- Full Group ($n =14$), No Direct Intervention- Partial Group ($n=19$).

Measure	Full Intervention		Partial Intervention		No Direct Intervention-Full		No Direct Intervention – Partial	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Use of steps of the CRM model	2.56 (2.03)	9.63 (4.95)	2.53 (1.12)	6.41 (4.58)	1.86 (1.03)	5.69 (3.73)	3.83 (1.76)	4.77 (3.29)
Use of positive words (% of words)	17.76 (18.38)	40.76 (23.76)	20.74 (19.77)	29.74 (28.09)	35.96 (23.07)	39.41 (27.35)	14.47 (18.74)	15.94 (23.67)
Use of negative words (% of words)	61.47 (28.72)	35.22 (22.33)	59.28 (27.49)	40.10 (29.76)	44.83 (21.50)	27.29 (33.09)	67.67 (26.31)	65.82 (33.54)

Note: CRM = Conflict resolution model

Table 2.

Means (and Standard Deviations) at Post-intervention on the Key Outcome Variables for the Four Groups: Full intervention, Partial intervention, No Direct Intervention- Full Group, and No Direct Intervention- Partial Group.

Measure	Full Intervention		Partial Intervention		No Direct Intervention - Full		No Direct Intervention – Partial	
	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>
Reported time teaching CR curriculum to students	27.09 (3.49)	16	17.23 (4.86)	15	17.11 (6.49)	13	14.33 (6.49)	18
Impact of ERIS on conflict handling	38.00 (7.58)	16	35.00 (6.02)	16	27.08 (12.02)	13	19.13 (9.86)	16
Level of priority ERIS has been in the school	3.60 (1.14)	15	2.71 (1.05)	17	3.46 (1.33)	13	2.31 (0.60)	16

Note: CR = Conflict resolution

