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Technology-Based Approaches to Preventing Youth Violence

A Formative Evaluation of Program Development and Implementation in Four Communities

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This study uses implementation research and case study methodologies to evaluate the Federal Mediation and Conciliation Service's Youth Initiative in four communities. In each location, information technology was used to involve stakeholders in developing solutions to the youth violence problem. The purpose of this article is to document the different approaches to program development and implementation across cases and provide feedback to policy makers and program stakeholders that can be used to make future improvements. The programs are assessed using the Centers for Disease Control and Prevention's Best Practices of Youth Violence Prevention, and feedback for improvement is provided. The biggest successes include assessing the nature and extent of youth violence in local communities, identifying those who would benefit from intervention, and deciding how to reach out to participants. Establishing clear goals proved to be the biggest challenge.

Keywords: *formative evaluation; implementation; program development; youth violence prevention; technology,*

Youth Violence: An Old Problem With a Growing Sense of Urgency

Although juvenile crime rates in the United States have been decreasing since 1994, juvenile criminal violence remains a threat to communities (Welsh, 2005). In fact, youth violence has been described as a "public health problem of epidemic proportions" (Weist & Cooley-Quille, 2001, p. 147). There is a growing consensus about the need for programs to prevent youth violence (Tolan, 2001b). As evidence of the policy significance of youth violence, funds have been made available at the federal, state, and local levels to develop and implement violence prevention programs (Cunningham, 2000). The current research is part of an ongoing project to develop innovative ways to reduce and prevent youth violence. Specifically, the current research evaluates the development and implementation of the

Federal Mediation and Conciliation Service's (FMCS) Youth Conflict Resolution and Peer Mediation Project in four communities. In each of these programs the FMCS's Technology Assisted Group Solutions (TAGS) program was used to involve the community in developing school-based programs to address to the youth violence problem.

History of the FMCS

The FMCS was created in 1947 as an independent agency of the U.S. government. The FMCS's primary mission is to preserve and promote labor-management cooperation by providing dispute resolution assistance to employers and their unionized employees. Over time, the FMCS expanded its areas of practice beyond the arena of labor-management relations. For example, in 1975 the FMCS entered the arena of alternative dispute resolution (ADR) to help resolve a 100-year-old conflict over land use between the Hopi and Navajo Indian tribes in Arizona (FMCS, 2004b). Currently, the FMCS provides dispute resolution assistance in a variety of settings including: Equal Employment Opportunity/workplace disputes, regulatory negotiation/public policy dialogs, environmental disputes, and international conflicts. In addition to traditional mediation, the FMCS offers a full range of services aimed at developing the practice of conflict resolution such as disputes systems design and relationship development and training (FMCS, 2004b).

Technology and Dispute Resolution

Increasingly, information technology (IT) and distance communication are being used to facilitate more traditional ADR processes. Commonly labeled as *electronic dispute resolution* (EDR) or *online dispute resolution* (ODR), this approach offers a new set of information management and communication tools for dispute resolution. Because dispute resolution involves information processing, information management, and communication, the application of IT to dispute resolution seems to be a natural fit (Hörnle, 2003).

Currently EDR/ODR represents a broad spectrum of processes. At one end of the spectrum, traditional face-to-face meetings predominate, and very little technology is employed. At the other end, the parties to disputes never meet face-to-face and disputes are resolved entirely using online technology. The challenge for dispute resolution professionals is to choose the right mix of technology and traditional dispute resolution methods (Hörnle, 2003).

Youth and Technology

A technology-based, group communication approach to conflict resolution may be a conceptual hurdle for some. As Hattal and Hattal (2002) suggested, technology is a double-edged sword. On the one hand technology, such as video games and computers, encourages isolation because it facilitates the avoidance of face-to-face interactions. It is through face-to-face interactions that children learn social skills such as compassion, empathy, and concern for others. Children who lack secure attachments to others may be at the greatest risk

for retreating into a cyber-world made up solely of television, video games, and computers. For such children, the technological companions of their cyber-world, such as point-and-shoot games and Internet sites advocating violence, can fuel anger and revenge.

At the same time, technology can be a valuable tool in preventing youth violence because young people for the most part are comfortable using technology (Hattal & Hattal, 2002). Technology-based interventions have been used to address similar issues such as health promotion and substance abuse prevention (Bosworth, Gustafson, & Hawkins, 1994; Orlandi, Dozier, & Marta, 1990). Indeed, another computer-based violence prevention program, SMARTTalk (Students Managing Anger Resolution Together), performed well when pilot tested at a middle school. Specifically, SMARTTalk was well received by the target population, and participants demonstrated improved knowledge and practice of prosocial behaviors (Bosworth, Espelage, & DuBay, 1998).

FMCS's TAGS

The FMCS's TAGS program uses IT to facilitate conflict resolution and collaborative problem solving (Barnes, 2002; Wolf, Numair, & Yoedt, 2002). TAGS is a networked system of Internet servers, mobile computers, electronic conferencing facilities, customized software, expert facilitators, and external partners assembled to enhance group communication and decision making. TAGS incorporates two software packages, Facilitate.com and eRoom.

Facilitate.com may be described as set of Web pages designed and linked in a fashion that allows users to perform a number of collaborative and analytical tasks in a synchronous or asynchronous environment. For example, Facilitate.com conferences or meetings allow all participants to make comments or enter ideas on the "electronic flipchart" simultaneously. The number of participants is limited only by the speed and capacity of the server and the router handling the traffic. The software is a powerful tool for gathering input.

However, collecting the data is not the sole value of the software. When input is gathered, facilitators can use the software to

- facilitate discussion of the comments, "flipping" effortlessly from electronic page to electronic page
- categorize, edit, and rank comments using the software, while the participants are still present, in a synchronous conference
- create and conduct surveys based on the participants' comments
- download comments, surveys, and other data to other programs for further analysis or use

One of Facilitate.com's most distinguishing features is the fact it is server based and hosted. Participants do not need sophisticated software or hardware to take part in a conference or meeting. Any computer capable of connecting to the Internet with up-to-date browser software is sufficient.

Although Facilitiate.com is an excellent program for facilitating collaboration, it has limitations. To address these limitations, the FMCS adopted a system known as eRoom. The eRoom program is also server-based, allowing synchronous and asynchronous communication and collaboration. Unlike Factiliate.com, eRoom is not the primary collaboration tool.

Rather, it is a virtual meeting space, or "e-room," through which software programs are accessed, documents are stored, e-mail is sent, and other meeting-related activities take place. Together these programs may be used to pursue such tasks as information sharing and negotiation, idea generation, decision making, problem solving, and commitment building.

As part of its congressionally authorized Youth Conflict Resolution and Peer Mediation Project (hereafter referred to as the Youth Initiative), the FMCS employed TAGS to help communities address youth violence issues. The Youth Initiative offers students, parents, schools, and community leaders an important tool to more effectively meet the challenge of school and community violence (Barnes, 2002; Hattal & Hattal, 2002; Wolf et al., 2002). In brief, TAGS provides school districts and local communities with state-of-the-art electronic communication resources for assessing their local conditions and developing solutions. For example, a typical Youth Initiative eRoom contains links to current and completed Facilitate.com conferences, documents related to different aspects of the program, PowerPoint presentations, video clips, e-mail lists, and a calendar. In addition, eRoom has the ability to notify participants if another participant has modified a file or added a file to the eRoom.

The Role of Evaluation

To develop effective programs to address the problem of youth violence, rigorous testing of a diverse set of interventions is needed (Acosta, Albus, Reynolds, Spriggs, & Weist, 2001; Ford, 2002). Currently, too little research and funding is focused on developing and testing interventions (Pichler, Urban, & Bockewitz, 2005; Tolan, 2001b). It is important to monitor programs throughout the design, implementation, and administration phases. Faced with a limited budget, many organizations choose to forgo evaluation to free up funds for administering intervention activities. However, evaluation is a crucial part of the process. Evaluation serves two key purposes. First, an evaluation can show that the intervention worked. Program advocates can use an evaluation to demonstrate to funders and community leaders that the intervention is worthwhile. Alternatively, when an intervention does not meet expectations, evaluation can help pinpoint what went wrong (Thornton, Craft, Dahlberg, Lynch, & Baer, 2000).

Summative evaluation assesses the effects of interventions on outcomes such as prosocial skills. For example, Vazsonyi, Belliston, and Flannery (2004) conducted a summative evaluation of a school-based violence prevention program and reported positive results for high-risk children. However, if the program has not been implemented properly, summative evaluations may be misleading.

In formative evaluation, a program's development is monitored for consistency with sound principles of design and implementation. Without proper implementation, positive benefits for students cannot be expected (Sandy, Bailey, & Sloane-Akwara, 2000). Formative evaluation of conflict resolution programs can provide feedback and documentation that can be used to make future improvements (Nan, 2003). This type of evaluation is particularly appropriate in the case of technology-assisted learning programs because the evaluative information can be used to make design and development changes (Manias, Bullock, & Bennett, 2000).

Method

This article combines implementation research and case study methodologies. The implementation research approach attempts to answer the following broad questions: "What is happening?"; "Is it what is expected or desired?"; and "Why is it happening as it is?" One of the key advantages of implementation research is its ability to provide timely feedback to program managers and policy makers (Werner, 2004). The case study approach is well suited for evaluation research because it allows the researcher to describe the intervention in the context in which it occurs and to explore situations in which an intervention has no clear single set of outcomes (Yin, 1994). Indeed, Kmitta (2000) called for more comparative case studies of implementation of school-based conflict resolution programs.

The data sources for the current study include: participant observations of activities at the pilot sites; in-depth interviews with program stakeholders; and analysis of archival reports, written documents, and internal intellectual property posted on FMCS-secured TAGS servers. The data are primarily qualitative. Werner (2004) noted that such data can improve public administrators' and policy makers' understanding of the environments in which programs operate and stakeholders' experiences with the programs. Likewise, Kmitta (2000) contended that qualitative research is more useful than quantitative approaches for assessing program development and implementation.

Framework for Evaluation

The evaluation draws on the Centers for Disease Control and Prevention's Best Practices of Youth Violence Prevention. Specifically, the programs are evaluated according to the following 10 principles of effective design and implementation of youth violence interventions (Thornton et al., 2000, p. 5):

1. Describe the problem of youth violence in a particular community
2. Identify the individuals who would benefit most from an intervention
3. Decide how and where to reach out to potential participants
4. Establish clear goals for the intervention to meet in order for it to be considered a success
5. Choose a set of interventions
6. Identify funding sources
7. Involve the community in the planning process
8. Develop specific activities and materials for the interventions
9. Hire and train staff
10. Evaluate the program's success

In addition, the assessment includes stakeholders' perspectives on the perceived need and value of the Youth Initiative program.

In the paragraphs that follow an overview of the FMCS Youth Initiative is provided. Then each pilot program is described. Case summaries include a list of activities that have been completed to date, key stakeholders, program implementation issues, and a discussion of success and problems. Next, these programs are evaluated using the criteria outlined above. The concluding section provides a discussion of lessons learned and future directions for youth violence prevention.

Table 1
Selected Demographic and Financial Data for School Districts

	Students	Faculty	Staff	Total Population	Median Household Income ($)	District's Revenues ($)	District's Expenditures ($)
Site A[a]	23,748	1,565	391	404,140	55,244	331,596,000	303,518,000
Site B	7,122	445	372	52,129	45,237	57,454,000	50,285,000
Site C	14,385	1,038	965	99,698	38,560	106,826,000	115,803,000
Site D	2,738	177	148	15,738	28,797	19,980,000	17,844,000

Source: National Center for Education Statistics (2001).
a. This pilot site covers three school districts. The data reported are the totals across the three districts. The median household income reported is the middle value among the three districts.

Overview of the FMCS Youth Initiative

After receiving funding for the Youth Initiative in January 2002, the FMCS began partnerships with six communities across the country to implement a technology-based approach to youth violence prevention. The FMCS provided TAGS training to community stakeholders. Each pilot site was encouraged to design applications that address the special needs of youth in its given community. However, all sites shared the central goal of using technology to provide youth, teachers, school administrators, and community members with a "voice" in identifying and resolving issues of school conflict and youth violence. One site did not make substantial use of TAGS in its program development phase and one site never progressed beyond the planning stage. These sites are not discussed further in the current study. By June 2003, four sites were in the process of developing and implementing technology-based, community-specific youth violence prevention programs.

When Congress made funding available, the FMCS was under pressure to move forward with selecting pilot sites and launching the Youth Initiative. Ultimately, the FMCS ended up with a convenience sample of sites in which community members expressed a desire to participate, local mediators agreed to support the program, and the communities varied on the criteria of population density, local socioeconomic conditions, and regional representation. Demographic data for the four pilot sites are presented in Table 1. A description of the progress made to date at each site is provided in the next section.

Case Summaries

Site A

Program description. This program is located in the suburbs of a large midwestern city. Taken together, the suburbs have a population of about 404,000. The population is more

than 80% White. A few years ago, the members of this community established a Healthy Community Partnership (HCP). The HCP consists of representatives from two high schools, a middle school, the Chamber of Commerce, local faith-based groups, other local organizations, and members of the community. The participating schools are located in three school districts. Combined, the two high schools and middle school have an estimated enrollment of 4,617 students. Although the partnership is interested in promoting well-being in the community as a whole, various programs address youth-related issues. The breadth of community involvement was a special consideration in the FMCS's decision to invite the HCP to participate in the Youth Initiative. The project achievements to date include:

- Using FMCS technology to help develop a program in coordination with a nonprofit organization that allowed 100 youths to amass more than 5,000 hrs of community service in just 18 weeks. Participants also created a "mix it up" social event to encourage mingling between students belonging to different cliques during lunch periods.
- Forming a "Youth Committee" aimed at promoting activities between high school seniors and younger students.
- Establishing relationships between youths and representatives from local businesses, governments, and nonprofit organizations to address issues of common concern. Using FMCS technology to strengthen the bonds between these groups by sharing information on safety issues and upcoming events.
- Devising curricular tools based on Dr. Seuss' *The Butter Battle Book*. These are housed in virtual "eRooms" relating to conflict resolution and youth violence.
- Creating a "Youth Court" Web site in coordination with the appropriate local officials, where children can track the court cases of anonymous juvenile offenders.
- Constructing a resource database designed to link youths to professional service providers such as crisis intervention and youth and family services.
- Establishing a Web site devoted to this initiative.
- Administering a software-based "Tolerance Survey" to students.

Not content with this long list of accomplishments, the community also plans on:

- Involving 800 to 1,000 teachers in technology-based discussions of youth violence issues.
- Applying for an award from the state's governor in honor of their achievements.
- Collaborating with another nonprofit social service agency to organize and conduct anger management activities.

Key stakeholders. This project developed as a result of the local FMCS commissioner's work with the city. The commissioner was familiar with the local HCP project and recognized that TAGS could directly benefit the local youth and community at large by linking community-based organizations with common goals. The commissioner believed the youth elements within the HCP justified proposing the group as the program base or stakeholder group for a Youth Initiative pilot project in this location. When the project was approved, a core group was formed. This group included the commissioner, the youth officer from the local police department, members of the city human resources department, a high school teacher, and a middle school teacher.

Program implementation. Implementing TAGS at this location was, in one sense, relatively straightforward. The schools involved in the project appeared to be "wired" campuses. In addition, the city appeared to use computer technology extensively. Therefore, primary stakeholder training was relatively easy, and conducting surveys was not a technologically challenging undertaking.

It was the scope of the project that caused the greatest implementation challenges. Although some members of the HCP embraced the technology and used it substantially during the first project year, others did not. During the site visit to this project, the commissioner expressed disappointment and concerns over the lack of involvement on the part of the general community stakeholders. Simply making surveys and brainstorming available to the larger group did not lead to the results that the commissioner anticipated. The group provided limited input on project goals or other issues using a TAGS conference site specifically set up for the group's use.

One bright spot in this challenge was the acceptance of the technology among youth participants. The youth of the schools and community seemed to adopt the technology easily. Participation in youth surveys was substantial, and stakeholders believed the outcomes were positive.

Successes, problems, and lessons learned so far. One of the many success stories at this location was the creative use of TAGS to design and administer a tolerance survey to address students' beliefs about barriers among different groups and individuals. The results of the tolerance survey were used to design a curriculum to educate students about intercultural issues. In addition, TAGS was used to involve students in online surveys about causes of conflict and online brainstorming sessions about resolving conflict. The teachers involved in these efforts believed the results they were seeing would not have been possible without TAGS support. They readily admitted their beliefs were based on limited use; however, their professional instincts and the response of the students to date gave them significant hope for positively influencing student response to conflict.

One of the positive aspects of this program, broad-based community participation, also posed challenges. The HCP consists of 31 organizations ranging from religious and service organizations to educational and municipal entities. The sheer magnitude of the project resulted in a flurry of activity throughout the community. The large number of participants necessitated the creation of a smaller core group. The core group of stakeholders served as the primary project designers and the larger extended stakeholder group was asked to provide input on project design and implementation. Funding restrictions limited the ready access of a TAGS communication tool known as eRoom to the core group and FMCS personnel. This presented a communication problem, as programming designed by the core group was not always shared with the stakeholders at large through the eRoom.

In time, this project may be viewed as a minisocial movement with the objective of improving the community in general and the youth within the community in particular. Arguably, this project has experienced the greatest success of all the pilot sites. In the process, though, it also consumed the greatest amount of FMCS resources in terms of the local commissioner's time. This commissioner made the Youth Initiative her top priority. At the same time, she maintained her traditional caseload of labor-management disputes. It may be difficult for other locations

to replicate the success of this site without substantial commitments from the FMCS to provide release time for commissioners working with the Youth Initiative.

Site B

Program description. This suburb of a mid-sized northeastern city has about 50,000 residents and is more than 80% White. The FMCS Youth Initiative project at this location is a school-specific program housed in a middle school. The participating school is one of three middle schools in the school district. The school has approximately 530 students in Grades 6, 7, and 8. So far, the participants have conducted and administered several surveys to the student body, including a tobacco survey, a character survey, and school climate surveys. They used TAGS to support the Neighborhood Watch program, enabling members to participate in meetings, make suggestions, and report problems. In addition, TAGS was used to enhance other programs. Future plans include hosting a Web site that provides youth violence prevention links.

Key stakeholders. This project is a school district–based program. Currently one middle school is participating; however, the district is interested in expanding the programs to other schools. Although district based, the initial project has a community component. The community component involves the police department and the local neighborhood.

When approached about the Youth Initiative, administrators at the middle school immediately recognized its potential value to local schools and the community. In fact, the perceived benefits were so great that the school placed development of other programs on hold while they decided how to leverage the Youth Initiative assistance. The two lead stakeholders in this program were the assistant principal and the School Wide Enrichment Program teacher. In addition, the principal, the school counselor, and the instructional support advisor provided substantial support and feedback on the project.

Program implementation. Implementation of TAGS as part of the Youth Initiative project at this location occurred rapidly. The participating middle school is "wired" with current computer technology. Internet access and software compatibility were not problems. In addition, the faculty and staff were comfortable with computerized activities and projects. The availability of two FMCS commissioners helped with implementation.

To illustrate, the FMCS commissioners convened a local stakeholder meeting at this location in July 2002. Approximately 10 local stakeholders attended. At this preliminary meeting the FMCS commissioners introduced the TAGS program and provided stakeholders with hands-on training. When the FMCS conducted a general program orientation for stakeholder groups in Washington, D.C. in August 2002, the stakeholders from this site were already familiar with the technology. As a result, they were able to use the TAGS program to begin strategic planning for their site while at the orientation meeting.

During the fall 2002 semester, stakeholders at this location conducted visioning meetings and began collecting information about youth violence in the local environment. Using the TAGS system, students participated in a survey about school climate. The survey asked students about their experiences with youth violence, respect for others, and what happens when incidents of violence are reported. The information gathered in this survey was used

to generate a baseline report. In subsequent years, the survey was administered at the beginning and end of the school year to gauge the progress made on addressing the problem of youth violence.

By the spring 2003 semester, stakeholders at this location began using TAGS in the Team Challenge and Neighborhood Watch programs. In addition, stakeholders established a Youth Initiative Web site in spring 2003. The Web site was accessible to students, parents, faculty and staff, neighborhood watch members, and the local police department. The Web site provided links to additional information for each of these groups, served as a working area for program suggestions, and was used to administer surveys to students and parents.

Successes, problems, and lessons learned so far. Prior to launching the FMCS Youth Initiative the middle school administrators at this location were already developing their own initiatives to address youth conflict and violence issues. Administrators saw that the FMCS Youth Initiative could offer innovative techniques to improve existing programming through the use of technology. For example, the school developed a neighborhood watch program to address youth issues. This program is unusual in at least two respects: (a) the school initiated it, instead of local residents or the police and (b) the focus of the program is to reduce student misconduct by having the residents monitor student behavior. In most areas, police departments initiate Neighborhood Watch programs as part of a community policing effort, or neighborhood groups initiate such programming as a means to protect themselves and their property from criminal activity. Through the Youth Initiative, the school district developed a Web page that serves as a Tips Hotline for the Neighborhood Watch. The Neighborhood Watch link is a secure link requiring a password. Neighborhood Watch members may provide information anonymously through this link.

In addition, as part of the Team Challenge program, each grade is divided into two teams. Administrators indicate that the teams provide a positive educational and socializing medium for the students, as well as camaraderie and a competitive outlet for the students in an educational environment. Administrators believe the team approach has been successful in several ways, including the reduction of disciplinary problems. Students in this location used TAGS's electronic flipchart application to generate suggestions and to vote on various awards for the Team Challenge program.

Finally, the school developed an after-school program involving the local police department. The program is a means of encouraging students to interact with police officers and peers in a positive environment. It consists of regularly scheduled after-school activities suggested by the students. TAGS was used to identify activities for the after-school police program.

A primary goal of the Youth Initiative is to improve communication within and between the project communities through the use of TAGS. The stakeholders at this location made extensive use of the TAGS program's meeting facilitation and survey components. However, they made minimal use of eRoom, a Web-based tool that may be used to facilitate information sharing and information processing. When questioned about this, stakeholders reported that it was unnecessary. The stakeholders work within a few steps of each other, and it proved more convenient to hold face-to-face meetings when necessary.

Stakeholders at this site chose not to use the FMCS server space provided for Web pages. Instead, the Youth Initiative Web site for this location is hosted on the school district server. Regardless of the server used, the Web site has been an important tool for students, parents, administrators, and other members of the community.

The stakeholders' decisions regarding eRoom and Web hosting serve the target population of local students and community members well. However, both decisions resulted in limited communication with other pilot sites and Youth Initiative stakeholders not housed within the middle school. The experiences at this site underscore the need for accurate recordkeeping and information sharing. On the one hand, face-to-face meetings may be the easiest method of communication for the immediate parties involved. However, without a written record of issues discussed, alternatives considered, and solutions reached it will be difficult to share the knowledge gained in this process with others. The technology tools provided by the FMCS facilitate communication by producing an electronic record of events such as brainstorming sessions.

Site C

Program description. This suburb of a large southwestern city has a population of about 100,000 and is more than 70% White. Participants include two high schools, five middle schools, an alternative school, and the county's juvenile offender's facility. To date, a survey has been administered to faculty and staff on the issues of school violence and safety. The survey results led to the development and implementation of a safety and security proposal. Based on faculty and staff input, the school district invested more than U.S. $1 million in upgrading the physical security at the schools. The upgrade included the installation of security cameras and monitoring systems in the schools and staffing support. Faculty and staff considered the administration's willingness to invest such a large sum of money as a sign of their commitment to work together to address school violence and safety. In the works are the following:

- Preparing a survey to be administered to students
- Publicizing a unique and successful youth violence prevention program called Teen Mediafest, in which students use audiovisual technology to compete for awards by creating positive messages

Key stakeholders. This project is a school district–based project. The initial stakeholder group included two faculty members, one administrator, one counselor and/or teacher and a community volunteer. FMCS support for the project comes from the local commissioner. Although the initial stakeholder committee remained relatively small, other stakeholders have participated in the project as needed. This group includes the principals of the schools involved in the study, the deputy superintendent, and members of the Teacher Communication Committee.

Program implementation. Implementing TAGS was achieved with relative ease in this location. The stakeholders were formally introduced to TAGS in August 2002 at the initial

stakeholders' meeting in Washington, D.C. When the project was formally approved by the school district administration, implementation of the project, via TAGS, moved forward in a timely fashion. To illustrate, by September 2002, stakeholders were holding monthly meetings. In December 2002, the survey on school violence and safety was administered, and installation of the upgraded security system began during the fall 2003 semester.

This site is a "wired" district, in that computer access is the rule and not the exception. Computer and audiovisual–based programs are common throughout the district. In addition, this site benefited from the proximity of a local university and the close relationship that the FMCS commissioner has with the university and the area. Participants at this site were able to tap resources at the university for help with the survey and the information technology.

Successes, problems, and lessons learned so far. Early on, stakeholders in this location proposed using TAGS to develop needs assessment surveys for district employees and students. The initial needs assessment instrument was developed to survey the faculty and staff of the two high schools and five middle schools within the district. To administer the survey, the local FMCS commissioner posted the stakeholder-developed survey on the FMCS TAGS Web site. When the survey was posted to the site, an e-mail from the assistant superintendent invited all faculty and staff at the designated schools to participate in the survey. Of the 800 individuals asked to participate, 506 completed the survey, for a response rate of 63%.

The survey results provided valuable information about the types and quantity of professional training needed by faculty. In addition, it identified respondents' perceptions of the most critical youth violence issues facing faculty and/or staff through the survey. This information was shared with school district administrators. After reviewing the data, the district superintendent accepted the stakeholders' recommendation to conduct a focus group concerning the survey results. Using TAGS, a focus group session was held. The group recommended that three primary areas of concern be addressed by district administration. The primary areas of concern were the need for in-service training on gangs, drugs, and violence.

Another success of the Youth Initiative at this location was the expansion of Teen Mediafest. Teen Mediafest encourages youth to use technology to compete for cash awards and community recognition by creating specific audiovisual messages about topics such as violence, substance abuse, physical and/or mental abuse, suicide, bullying, and teen pregnancy. The local school district uses the spots developed by Teen Mediafest participants as public service and informational spots on television monitors throughout the school system. Currently stakeholders are working to expand the use of Teen Mediafest to include informational or training messages available through school computers, provide access to the messages through links on the district Web pages, and play Teen Mediafest spots at login on all district computers accessed by students and district employees.

Although this pilot site was highly successful in using the TAGS technology to develop new programs and enhance existing programs, the project stakeholders did not attempt to involve community members and organizations in program development and implementation. Instead, the program at this pilot site focused on faculty, staff, administrators, and students from nine campuses in the district.

In part the exclusion of community members was due to the desire to keep the initial effort focused and simple. However, local political concerns played a role in this decision. Several key and secondary stakeholders voiced concerns about involving the community.

Their primary concern was that the technology made surveys too easy to use and too open to scrutiny.

This is not an unusual or totally unexpected reaction on the part of some administrators. The simple fact that the school district was taking part in a youth violence program could be politically damaging to school officials. Still, researchers and practitioners generally agree that community members should be involved in resolving the problem of youth violence.

Site D

Program description. This rural midwestern county with about 14,000 inhabitants is more than 90% White. It is an economically depressed area, with a shrinking population. To lure employers, it boasts on its official Web site that it has "one of the highest unemployment rates in the state." The depressed economy and rural nature of the area translate into few job opportunities for young people and even fewer recreational outlets beyond intramural athletics. Stakeholders believe this is a major cause of youth conflict and violence in the community.

This is a school-based project involving an elementary, middle, and high school. The Youth Initiative project at this location is still in the early stages of development. Recently, stakeholders constructed a student survey to identify student perceptions and concerns about violence. Stakeholders also envision using TAGS in its problem-solving mode to identify after-school work and recreational activities for the youth of this rural community. In addition, this site incorporated a scaled-down version of the Mediafest concept developed by Pilot Site C, which stakeholders here plan to expand in their second year of operation.

Key stakeholders. The core stakeholders involved in this project are faculty and administrators at the high school and elementary school. In addition, faculty and staff at a vocational/technical school, with a very small student body, were invited to participate. However, stakeholders at the vocational/technical school have not materially participated in the initial pilot project. Moreover, because FMCS commissioners are traditionally assigned to metropolitan areas, support for rural project sites tends to be stretched thin.

Program implementation. Implementing TAGS was difficult in this location, due in part to the area's continuing economic problems. Investments in school infrastructure are tied to the economic condition of the community and state. The effect on the county can be seen in the physical plant and the infrastructure of the school district. Moreover, it also is apparent in district expenditures per student that are significantly lower than the other districts participating in the Youth Initiative.

The schools at this site are not "wired." The schools involved do have computer labs, as a result of a foundation grant; however, school district equipment lags behind the times. The Youth Initiative technical specialist and project director provided additional support, mentoring, and training to help stakeholders overcome these problems.

Successes, problems, and lessons learned so far. On a positive note, stakeholders at this location appear to have used eRoom access more than other project sites. There was

particularly heavy usage of this communication tool during the survey development phase of this project. Because the eRoom creates a written record of communications, it facilitates information sharing among participants. Thus, participants in other locations may benefit from the topics addressed, techniques used, and lessons learned at this pilot site.

Perhaps the biggest lesson that may be drawn from this pilot site is that addressing the problem of youth violence will require a significant infusion of resources. Local economic conditions affect this community in a number of ways. As noted above, the school district's physical plant and infrastructure are deteriorating. In addition, students, parents, and other community members who are living in poverty devote most of their energies to meeting day-to-day subsistence needs. When in this "survival mode," it is extremely difficult to even contemplate community development projects, let alone take action.

If the Youth Initiative at this location is to succeed, it will require additional support beyond the financial, technical, and mediator assistance provided by the FMCS Youth Initiative program. However, there is reason to believe the program can succeed, with adequate support. Faculty and students with knowledge of the Youth Initiative saw great potential benefits in the program. Students especially were excited about the possibility of producing their own Mediafest. Administrators believed Mediafest and other projects might provide students with hope and opportunity.

Summary and Analysis

Adherence to Principles of Effective Implementation

In Table 2, the pilot sites are assessed using the Centers for Disease Control and Prevention's Best Practices of Youth Violence Prevention. In general, the sites appear to be on the right track in terms of their adherence to principles of effective implementation of conflict resolution programs. All four sites have administered surveys. These surveys were intended to help stakeholders assess the nature and extent of the youth violence problem in their communities. These efforts satisfy the requirements of the first step in the best practices model. The data collected through TAGS were used to complete Steps 2 and 3: identifying those who would benefit from intervention and deciding how and where to reach out to potential participants.

Perhaps the most consistent departure from recommended procedures concerns the fourth step, establishing clear goals. There is no indication that such a step has been contemplated at any of the sites. This may prove to be an impediment when the programs mature to the point where the final step, evaluation of the program's success, becomes feasible. Ideally, the program's effectiveness should be considered in light of its success at meeting its goals. The absence of specific, articulated goals raises the risk that an evaluator will assess a program in terms of his or her goals, which may differ from the original intentions of the program planners. This may also cause motivational issues. "Goal setting theory," a popular theory of motivation, posits that specific goals should assist in boosting motivation by focusing attention on measurable results (Locke, Shaw, Saari, & Latham, 1981).

Step 5, choosing the set of interventions, seems to follow the "borrowing and tinkering" approach to policy design (Weimer, 1993), in which successful applications in similar situations are slightly modified for local use. For instance, Sites A and B used assessment data

Table 2
Adherence to Principles of Effective Design and Implementation

Design Principle	Site A	Site B	Site C	Site D
1. Describe the problem of youth violence in a the community	1	1	1	1
2. Identify the individuals who would benefit most from intervention	1	1	1	1
3. Decide how and where to reach out to potential participants	1	1	1	1
4. Establish clear goals for the intervention to meet in order for it to be considered a success	3	3	3	3
5. Choose a set of interventions	1	1	1	2
6. Identify funding sources[a]	NA	NA	NA	NA
7. Involve the community in the planning process	1	1	2	1
8. Develop specific activities and materials for the interventions	1	1	1	2
9. Hire and train staff	2	2	1	2
10. Evaluate the program's success	2	2	2	2

Note: Principles derived from Thornton, Craft, Dahlberg, Lynch, and Baer (2000). 1 = strong performance, 2 = moderate performance, 3 = weak and/or nonexistent performance.
a. Start-up funding was provided by the Federal Mediation and Conciliation Service.

to integrate and improve existing programs. Site C modified an existing program, Teen Mediafest, to fit with the youth violence initiative. Site D has begun to develop programming based on the Teen Mediafest model.

Step 6 involves identifying sources of funding. Because the FMCS provided program funding for the Youth Initiative, the pilot sites are not assessed on this criterion. However, as mentioned above, stakeholders at Site C persuaded the school district to invest more than $1 million to implement the safety and security proposal developed as part of the Youth Initiative.

Step 7, community involvement, is a general area of strength. For example, the Youth Initiative in Site A involves the Chamber of Commerce, faith-based groups, city officials, local organizations, law enforcement officers, teachers, and youth. Site B includes students, faculty, and staff, as well as members of the local police department and neighborhood. Site C is a school-district-based project that also includes a juvenile offenders' facility. This site has benefited from the involvement of school district administrators, faculty, staff, and students, as well as a community volunteer and faculty and staff from a nearby university.

In accordance with Step 8, all sites developed materials and activities for the interventions. With respect to Step 9 (hiring and training staff), the FMCS provided TAGS training to community stakeholders at a general meeting in Washington, D.C., in August 2002 and offered additional site-specific training and support as needed. In addition, Site C implemented in-service training on gangs, drugs, and violence. The formative evaluation of program development and implementation presented here partially fulfills the requirement of Step 10.

The Stakeholder Perspective

Objectivity is an essential component of the researcher's role in gathering and analyzing information. However, the less objective observations and analyses of the stakeholders

provide insight into the perceived need and value of a program such as the Youth Initiative. The following comments provide such insight.

Site visits, telephone interviews, and stakeholder meetings provided the following feedback:

- The principal of a school making extensive use of the survey capabilities of the technology stated she believed the technology provided increased and enhanced opportunities for obtaining feedback from students about issues of interest. The assistant principal and key stakeholder believed the technology provided the same opportunities in the area of soliciting feedback from community and the school's neighbors.
- During a stakeholder meeting, a participant made the following comment about the success of a pilot site's initiative; "Interesting, a small rural community finding ways to do big projects that fit their needs and the needs of the youth they are working with. Pulling off the Mediafest in such a short period of time with all of the obstacles they had to face is remarkable. Success is not always measured by the quantity of projects that you complete but often by the relationships that are developed with the youth. If we can find a way to reach just one—we have been successful!"
- Another stakeholder commented, "no matter how good TAGS is, it will never stand in for committed young people who can bridge the gap between students who grow up in chaotic communities and those who have the social skills necessary to grow and develop into productive citizens. So we need to locate these wonderful, passionate young teachers and social activists and connect them to TAGS."

As the limited comments suggest, the stakeholders believe the program is and will be beneficial. However, they are not blinded by the technology and federal participation. The last comment clearly recognizes that technology and support are only ways to enhance the work of the people involved.

Conclusion: Lessons Learned

What general lessons can be drawn from the experiences of the four test sites in this technology-based youth violence program? To begin with, there is no quick fix to the youth violence epidemic. When examined one year after funding was made available, none of the sites had fully developed and implemented all of their planned interventions. Based on the comparative analysis presented here, several factors appear to influence the pilot sites' institutional capacity to "pick up" and effectively implement this innovation. These include stakeholder support, the availability of FMCS commissioners and their connection to the local community, the existing technology infrastructure, local stakeholders' skill set, and adaptability of the TAGS program. These factors are discussed in more detail below.

In the Youth Initiative, limited financial support combined with specialized software, mediation and technical skills of FMCS mediators, and committed representatives from local organizations provided leverage to the pilot sites. When school districts have specific persons assigned to coordinate conflict resolution education efforts, the likelihood of success is improved (Jones, Batton, & Carruthers, 2000). The three pilot sites that demonstrated the most progress during the first year (Sites A, B, and C) had two or three local stakeholders who were strong advocates of the program.

For example, at Site A the youth officer from the local police department, members of the municipality's human resources department, and two teachers were heavily involved in developing and implementing the program. Site B had strong support from school district administrators. Moreover, one of the teachers at Site B had a working knowledge of the practice of mediation and the FMCS's mission. As a result, the teacher was well positioned to take an advocacy role in program planning and implementation. Site C benefited from the support of faculty and staff at a nearby university who provided assistance with meeting facilitation, survey development, information technology, and problem solving. Faculty and staff at the university remained in close contact with the school district and were able to keep the project moving along.

In addition, Sites A, B, and C benefited from close relationships with the local FMCS commissioners. For example, the local FMCS commissioner for Site A developed and facilitated more than 21 electronic conferences during the first year of the program. Site B received support and assistance from two FMCS commissioners. The commissioner at Site C was uniquely qualified to work on the Youth Initiative. Prior to joining the FMCS, this commissioner worked as a police officer and a public school teacher. He brought his experience working with juveniles on probation and with a youth task force in another location to the Youth Initiative. His experience with a police force was especially helpful in addressing stakeholders' concerns about physical security in the schools. In contrast, the FMCS commissioner assigned to Site D was located several hours drive away from the rural county. The physical distance and the commissioner's traditional workload left little time to provide support to the youth initiative in this location.

The existing technology infrastructure and local stakeholders' skill sets also affected program implementation. In particular, Site D lacked up-to-date equipment and high-speed Internet access. Likewise, program stakeholders and participants at Site D were less skilled in computer usage than those at other pilot sites.

Finally, the task of password administration for the TAGS system posed a challenge to effective implementation across the pilot sites. Specifically, the TAGS system came with stringent security requirements that were built into the program by the FMCS. The TAGS program was originally designed for use in resolving labor-management disputes. In areas of collective bargaining and strike resolution confidentiality is of paramount importance. Neither management nor labor would agree to use a system that did not provide confidentiality and strict security measures. However, these security provisions served to complicate access and use of the TAGS system by Youth Initiative participants. In particular, program participants encountered difficulties with remembering and resetting their passwords and with built-in password expirations.

Future Directions

The divergent paths chosen at each of these sites indicate that no "one-size-fits-all" solution exists. Community leaders must be willing to put in the time and effort to conduct individualized needs assessments. However, they cannot do this on their own. There have been numerous calls for innovative approaches to youth violence that bring together conflict resolution professionals, researchers, educators, and local community groups (Jones, 2003; Jones & Compton, 2003; Sandy, 2001; Tolan, 2001a; Weist & Cooley-Quille, 2001).

The FMCS's Youth Initiative is an example of such a partnership. The FMCS provides two crucial components—technical expertise and start-up funding. The organizational and facilitation skills, as well as the ability to use technology-based solutions, reside in the federal mediators. Likewise, the FMCS provides free consultation and in many cases free Web hosting. Faculty, staff, students, parents, and community groups provide input on local needs.

Expanding the program to additional sites may provide information about the relationship between school district "wealth" (defined as school expenditures per student) and each program's progress during the first year of the project. Of the four school districts included in the original pilot sites, Site A spends almost twice as much annually per student as Site D—$12,929 versus $6,517, respectively. To put these amounts in perspective, the average expenditure per student in the United States during the same period was $8,104, as reported by the National Center for Educational Statistics (2001). Such a disparity in per-student expenditures probably affects the projects in more ways than physical infrastructure alone. It appears that Site A also has more extensive staff and community support systems that allow the school district to become more involved in experimental activities such as the Youth Initiative. Adequate resources are a key component of successful conflict resolution education (Jones, Johnson, & Lieber, 2000).

Perhaps equally important, the four test sites do not fully capture the diversity of American communities. Conflict resolution education has been insufficiently tested with culturally diverse populations (Baker, French, Trujillo, & Wing, 2000). If technology-based approaches to youth conflict resolution can be effective, what works in Ohio may not work in Alabama. A larger trial with a greater range of sites is crucial to lay the groundwork for summative evaluation, which can determine the extent to which this program helps prevent youth violence.

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