Options to Anger
A Multimedia Intervention for At-risk Youth

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A. General Scientific and Technological Aims

Interventionists across a spectrum of social service providers and educational facilities for at-risk youth are making a paradigmatic shift toward recognizing the importance of social skills training. In the juvenile justice system, for example, the approach, referred to as balanced and restorative justice, holds offenders accountable by requiring them to learn the social skills needed to make reparations for their actions B to the victims, to their families, to the community, and to themselves. The Job Corps, which historically has had a singular aim of teaching youth vocational and employment skills is re-thinking its fundamental approach by putting social skills training on equal footing with career training. In the foster care system, independent living programs are becoming an increasingly important resource for readying youth for independent living. The overarching value across all these service domains is an explicit recognition that all youth must have a solid core of social skills to actualize the other skills, knowledge, and experiences gained while in care.

A shared concern among all these social service providers is anger management. Although there are numerous materials on this topic, the vast majority use traditional pedagogical approaches intended for more mainstream youth in schools. The current effort represents a unique synthesis of best practices and state-of-the-art interactive multimedia delivery. The curriculum that we developed was adapted from the original version of *Options to Anger*, an approach that has had notable success locally and among a limited number of programs nationally who heard about and became invested in the training. In Phase I, the research team worked with the original authors to update and formalize the curriculum for group instruction, and to add an integrated set of multimedia materials and activities on DVD and the Web. The complete and revised *Options* curriculum was evaluated with a group of at-risk youth at a Job Corps center in the Northwest.

B. Phase I Research Activities

Product Development
Development in Phase I entailed writing and producing three integrated components of the program:

Curriculum: The research team worked extensively with the original authors of *Options to Anger* to produce an up-to-date and revised curriculum (a copy of the Facilitator=s Guide is attached as Appendix A). The authors have used the *Options* program for over a decade with groups of youth in the juvenile detention center in Lane County, Oregon. Over that time, these talented and experienced trainers made various refinements to the instruction and gained terrific proficiency in implementing the approach with high-risk youth.

Although the program was highly structured, the original curriculum guide lacked sufficient detail for an independent trainer to faithfully implement the program without extensive in-person training. Thus, one of the important aims in Phase I was to fully operationalize all the instruction so that the curriculum guide would accurately and fully convey all instructional activities and their conceptual underpinnings to an independent trainer. Documenting the curriculum involved at least two lengthy interviews per class with the authors in which they fully described the activities and concepts for a class, and related their own experiences and insights on delivering the instruction. In the process, some changes were made involving the use of language and the design of various activities, but overall, the revised curriculum was faithful to the original. One major difference in the revised curriculum, of course, was the inclusion of media materials and activities, which are described below.

The linchpin of the training is a classic pattern of reactive anger, called the Aautomatic anger cycle.@ The overarching goal of the instruction is to convey the elements of the anger cycle, how those elements are dynamically related, and how they apply to youths= experiences.

The cycle begins with a baseline state of normal activity. This is interrupted by an event that marks the beginning of a reactive anger episode. The event is called an Ainvitation,@ implying that reacting with anger is something an individual can *choose* to accept or refuse.

An important counterpoint throughout the training is developing and reinforcing individual courage, which in this context refers to any effort an individual makes to be honest, to make positive choices for change, and to affirm one=s own sense of worth.

Once the basic segments of the anger cycle are conveyed, a very focused exploration is made to search for an individual=s early warning signs of anger, both emotional/feeling and physical. This entails helping youth connect to what their first feelings were to an invitation. Youth acquire the appropriate words to help identify and describe their feelings. The first formal social skill that the class delves into is forming AI@ statements, which communicate youths= feelings to others in ways that specify what they are feeling, what they are reacting to, why, and what they would like to happen. AI@ statements allow youth to become aware of and take responsibility for their own feelings, rather than trying to inculpate or punish someone else for their feelings.

The main body of the training is dedicated to further building an array of social-communication skills. One set of skills is learning several ways to Atake space.@ Taking space encompasses a set of techniques that give individuals options for avoiding confrontation by breaking tension in a situation, which allows them to take care of themselves and remain clear in their thinking. These options may include leaving a situation, regaining composure while in a situation, slowing down the pace of communication, or temporarily unfocusing from others= hostile communication. Taking space may also involve specific communication statements that tell others in the situation what you are doing, when you will be back, and that you want to resolve the issue at that time.

A second set of skills, collectively called Aanchoring,@ includes a variety of positive self-talk statements that can also break tension and put problems into a healthier and more rational perspective. AAttention-getters,@ for example, are key phrases or thoughts an individual can use to break out of an automatic stream of negative self-talk. Positive self-affirmations can also be used to break negative self-talk and refocus individuals on how they respect themselves, rather than on how they feel disrespected by others. AUnhooks,@ another form of anchoring, are personal prompts that can put things quickly in a more positive perspective for the individual.

A component of the *Options* approach that accompanies all the communication skills involves learning to use relaxation techniques, especially before conflict takes hold. Techniques typically include deep breathing, tensing and relaxing muscle groups, calming visualizations, stretching, or self-affirmations.

Negotiation skills are also brought into the *process* of communication. Understanding basic principles of reciprocity helps youth constructively reframe what they and others want in a situation, and avoid creating stuck points during interactions, even when all the appropriate communication skills are being used.

In the final four classes the group puts all the skills to use in increasingly realistic and confrontational role-plays.

Web-Based Activity: In addition to the group instruction, the curriculum included individualized instructional activities on Vstreet.com, a comprehensive Web site on life skills training for at-risk youth previously developed by Northwest Media.

> We created six Vstreet Guest Accounts for reviewers so that they can view the online curriculum activities for *Options to Anger*. See Appendix B for instructions on logging in.

Agencies must individually register youth participants to gain access to the site. Youth then complete a set of online activities after each class. These included the following formats:

X *Animated Story:* Youth viewed an animated story of a group of virtual teens who are also going through the *Options* anger management training program. The story is told in segments that parallel the sequence of classes in the actual instruction. Each story segment sets up the terms, concepts, and skills for the next class. Students watch the virtual teens go through the process of telling their stories, interacting with each other and the facilitator as they acquire the relevant knowledge and skills.

Χ   *Journaling:* After viewing a story segment, youth went to a personal journal on the site and responded to a brief set of questions relating to the *prior* class. These entries were saved and stored so that they could be retrieved, edited, or printed.

Χ   *Drag-and-Drop:* There were four drag-and-drop activities designed to solidify and reinforce an understanding of the anger cycle, recognizing feelings, building AI@ statements, and taking space statements. Youth interacted by pointing, clicking, and dragging elements to their respective places within a template. Youth got immediate feedback, and suggestions when choices were incorrect.

DVD: The DVD contained the same animated story on Vstreet. The facilitator showed the corresponding story segment on a DVD and television monitor at the beginning of each class as a means of setting up the group=s activities, concepts, and skills (a copy of the DVD is attached as Appendix C).

Process for Developing the Media Content
The media materials were developed in several stages by the project team, which included Dr. Caesar Pacifici, the Principal Investigator; Lee White, Research Associate; Keith Qiao Jin, lead programmer; Dr. John Crumbley and John Aarons, the original authors of the *Options* program; Scot Deils, the conceptual designer, animator, photographer; Dustin Dubovik, animator and cartoon artist; Kris Hansen, cartoon artist and graphic designer; Mike Novotny, cartoon artist; Anthony McCarthy, sound engineer; and Diane Cisell, graphic designer.

To begin the process of developing the story segments, Lee White attended a complete *Options* training program given in the Juvenile Justice Department of Lane County by the original authors of the program. Mr. White was able to see the training in action and how youth responded to it, and also collected impressions for developing character profiles for the group of virtual teens in the story segments and ultimately, in writing the scripts.

As the curriculum content was solidified for each class, it formed the basis of the script for the corresponding story segment. The scripts then underwent an iterative process of review by the original authors and the PI until a final version was reached.

Talent was hired for the voices. All the voices were recorded and edited into soundscapes. Simultaneously, scripts were storyboarded and photographed. Posterized cartoons of the characters and scenery were rendered from the photographs. All audio and visual elements were then integrated and animated.

Also during this time, the graphics and programming for the drag-and-drop and journal activities were created.

Focus Group with Youth
After producing drafts of the first audio tracks of the first six multimedia segments, we conducted a focus group with four inmates ages 16 to 19 at the California Youth Authority O. H. Close Youth Correctional Facility. The purpose of the group was to get preliminary feedback from an at-risk population on the clarity and relevance of the concepts and stories that were used in the materials. At this stage of the production process, we were able to present a realistic version of the materials while still being able to make changes in the scripts with relatively little effort.

All participants in the focus group were male, and the ethnic/racial mix included two Hispanics, one African-American, and one Caucasian. The meeting was held in the lock-up facility in a general area meeting room and lasted for approximately 12 hours.

The Research Associate, Lee White, conducted the focus group. After introductions, he explained the concept of the *Options to Anger* program. He asked whether any of them had had previous anger management training. Two youth said they had some classes, but their responses seemed very mechanical and they stated that the training didn=t apply to the prison environment.

Mr. White then played the six audio segments of the scripted scenarios from his laptop computer. The

youth listened carefully to each segment, and as they did commented about the issues and topics. Mr. White asked each youth a different question about what was being taught; for example, the difference between a ⌐trigger@ and an ⌐invitation@ B which was discussed in the scripts B and they all understood it. One of the Hispanic youth was very verbal and could readily explain terms such as ⌐early warning signs,@ while the other Hispanic youth was not verbal and let the other Hispanic youth do his talking. The feeling throughout, however, was that they understood what was being taught and reviewed.

Their main concerns focused on how to apply the information to situations in lockup. They helped clarify how confrontations took place in an institution like theirs, and that they often had little or no choice on backing down when confronted. This information led us to change some of the scripted scenarios to include more intense confrontations and to be very clear that the training did not espouse simply ⌐walking away@ as a viable solution.

Based on the Research Associate=s observations of the youth, we also included a segment that dealt with the ⌐gangster walk@ as an ⌐invitation.@ A number of miscellaneous changes were made throughout the scripts that incorporated the language, dress, and culture of institutionalized youth.

Technical Development

All audio was recorded in-house, in studio sessions according to previously approved scripts. The sound engineer cleaned, sweetened, filtered, and edited audio tracks on Cool Edit Pro 1.2a. Sound foley and music were composed by in-house musicians and added to the soundtrack.

The artists and Flash Animator developed drawn characters, then animated and edited storylines according to approved storyboards. The Flash animator used final audio files and graphic elements to create a first rough-cut according to the script, using Macromedia Flash MX software. The entire team then reviewed this version and made appropriate revisions until reaching final approval.

The bulk of the production process was conducted using the Flash environment for quick turnaround for Web and DVD production and revision. Once approved, all files were authored for Web and DVD. This process for DVD required the authorer to export each story segment as an audiovisual image (AVI), then redeveloped in SonicDVDitPE. The graphic designer reproduced the buttons and menu screens and provided these in a format usable by the DVD authorer and designer. The DVD authoring was completed and then reviewed and menus were added for user clarification. As a final step, we burned the final DVD files, designed and created graphic labels and packing, and replicated the DVD as a final product.

At the same time, the graphical elements B navigator, buttons, etc. B were being developed and programmed for Web authoring.

Project Evaluation

We evaluated the effectiveness of the *Options to Anger* curriculum with youth enrolled at a Job Corps center in the Northwest, using a measure of knowledge of anger management skills and concepts, as well as the State-Trait Anger Expression Inventory (Spielberger, 1999).

We had planned to implement our intervention with youth in the California Youth Authority. Unfortunately, a total restructuring of personnel and activities in that system that stemmed from a lawsuit precluded them from providing the necessary cooperation with our study activities. We redirected our study site to the Job Corps for two reasons. First, its population is a good fit with our original target audience, which was youth who have problems with anger and have had encounters with the justice system. In addition, Job Corps centers provide a suitable structured environment and a stable number of youth in attendance over the required period of time for our intervention.

The results are presented according to two types of data: *descriptive information* on operational aspects of the program and demographic characteristics of the sample, and *inferential data* on group differences on the outcome measures.

Participants

We recruited youth who were enrolled in educational and vocational training at the Angell Job Corps center in Oregon. The Job Corps (JC) provides comprehensive services in 118 residential settings to over 70,000 economically disadvantaged youth annually (U.S. Department of Labor, 2002). Adolescents and young adults in JC typically demonstrate poor social skills, learning disabilities, legal and financial problems, patterns of substance abuse, and unreliable family/friendship support systems. To address these issues, Job Corps programs provide youth with a variety of educational and vocational training opportunities to facilitate career development and social skills development. The vast majority of youth in Job Corps centers live on-site as residents; 60% are male (Job Corps, 2002).

Our final sample included 82 trainees, 16-26 years old. Thirteen of the 95 trainees who were originally recruited did not complete the study, largely because they either went on leave or left the center for work. Our strategy, however, had been to oversample since we were aware that there were going to be unavoidable events that would prevent trainees from completing the study.

The study sample consisted predominantly of male trainees (37.8% female). The ethnic breakdown of participants was 9.0% Hispanic, 67.9% not Hispanic, 21.8% unknown, and 1.3% multi-ethnic. The racial representation in the sample was: White, 57.3%; African American, 7.3%; Native Hawaiian/Pacific Islander, 9.8%; American Indian/Alaska Native, 3.7%; Asian, 3.7%; multi-racial, 12.2%; and unknown, 6.1%. (See Appendix D, Tables 1 and 2 for further description of the sample.) Just under one-third of youth in the sample reported having some involvement with the juvenile courts в of these, a much larger percent were in the treatment group.

Participation in the study was voluntary. Participants received $15 for participating: $5 for completing the pretest and $10 for completing the posttest.

Procedure

The opportunity to participate in the study was announced to trainees by staff during regular class activities over a period of about one week. All those interested in participating were gathered in one meeting for the purpose of:

X   informing them about the study
X   obtaining consent
X   completing the pretest measures
X   assigning trainees to experimental groups, and
X   orienting trainees in the intervention group on using Vstreet.

To control for extraneous sources of variability as well as threats to internal validity, we randomly assigned trainees who agreed to participate to either an intervention condition or a wait-list control condition. In the final sample there were 38 trainees in the treatment group and 44 in the no-treatment control group.

For the pretest, trainees completed a brief demographics questionnaire, a knowledge questionnaire about anger management skills, and the State-Trait Anger Expression Inventory.

Before classes started, the facilitators registered all trainees in the treatment group on Vstreet so that they had access to the Web-based activity. Trainees accessed the Web site through computers in the computer lab on center or in their residences.

Trainees in the treatment group were formed into four groups of 10-11 that were scheduled to meet twice a week for one-hour classes over a period of 72 weeks (15 classes). Two facilitators co-taught all four groups.

At the end of the intervention period, the posttest measures were administered, which included the knowledge questionnaire about anger management skills, the State-Trait Anger Expression Inventory, and a user satisfaction questionnaire (for those in the treatment group). Participants in the control group took the posttest assessment over the same time interval as those in the intervention group, but they did not complete the user satisfaction questionnaire. They were given the opportunity to view the DVD after the completion of

the study.

Measures
(Copies of all measures are included in Appendix E.)

1) *Knowledge of Anger Concepts and Skills* (ACS)

Project staff developed a measure consisting of 23 multiple-choice and true/false items. The knowledge questions focused on the basic concepts and skills covered by the curriculum, e.g., the naive anger cycle, invitations to anger, AI@ statements, and taking space.

2) *State-Trait Anger Expression Inventory-Second Edition* (STAXI-2)

The STAXI-2 is a 57-item self-report measure that assesses an individual=s experience, expression, and control of anger. It is a revised and expanded version of the original STAXI (Spielberger, 1988; 1999) and consists of 6 scales: State Anger, Trait Anger, Anger Expression-Out, Anger Expression-In, Anger Control-Out, and Anger Control-In. The State Anger scale (15 items) measures the intensity of angry feelings at the moment. There are three 5-item subscales of the State Anger scale: Feeling Angry, Feel Like Expressing Anger Verbally, and Feel Like Expressing Anger Physically. The Trait Anger scale (15 items) measures the frequency of angry feelings over time or proneness to anger. Its two subscales are Angry Temperament and Angry Reaction. The Anger Expression-Out scale measures how often anger is expressed toward other people and objects, and the Anger Expression-In scale assesses the frequency with which anger is held in or suppressed. The final two scales assess individuals= attempts to control their angry feelings by preventing the expression of anger toward others (Anger Control-Out) and attempts to control suppressed angry feelings by calming down or cooling off (Anger Control-In). There is also a composite Anger Expression Index (ACI).

The STAXI-2 is appropriate for individuals who have at least a 6th grade reading ability. Most can complete it in 10-15 minutes. Respondents rate themselves on 4-point scales that assess the intensity of their anger (State Anger scale) and how often they experience, express, or control anger (all other scales). Norms are available for adolescents (16 to 19 years).

Although published psychometric evidence regarding the STAXI-2 is limited, we assume that the psychometrics for the revised measure are at least as good as those for the earlier STAXI, because revisions were based on the results of empirical studies. The scales and subscales of the STAXI have been empirically supported by factor analyses (Furlong & Smith, 1994). Good internal consistency and discriminant validity have been reported for the original STAXI (Feindler, 1995). For the adolescent norm group, alpha reliabilities for most of the scales and subscales range from .82-.90; the alphas for two are lower, i.e., .65 for Angry Reaction and .75 for Anger Expression-Out (Furlong & Smith, 1994). Moses (1991, p. 521) concludes that Athe STAXI has been painstakingly developed and validated. It meets strict psychometric criteria for validity and reliability in investigations reported to date.@ According to Feindler (1995, p. 179), Athe STAXI is a good choice, especially for adolescents.@

3) *Background Information*

Project staff developed a brief background information questionnaire that includes questions regarding the participant=s age, gender, ethnicity, race, education, time in JC, previous training on anger management, and whether an individual had any history with the juvenile courts.

4) *Usability*

This questionnaire elicited teens= feedback on the appeal, clarity, and value of the anger management intervention.

Hypotheses
The study addressed two types of information, both general and specific. With respect to the general characteristics of the study, we had two hypotheses:

1) The *ACS*, developed in house, will demonstrate satisfactory (>.70) test-retest reliability and internal consistency reliability coefficients.
2) The *ACS*, developed in house, will demonstrate satisfactory (>.60) concurrent, criterion-related validity coefficients with the composite Anger Expression Index of the STAXI-2.

The study was also interested in the effect of intervention group on a variety of outcome measures. An overall multivariate hypothesis is listed below. A .05 alpha level was used to determine significance in all statistical tests.

Omnibus multivariate hypothesis: Controlling for pretest differences, there will be significant differences between the groups= scores on the following measures, or a linear combination of them, at posttest:

Χ   Knowledge of Anger Concepts and Skills (ACS),

Χ   STAXI-2, including the Anger Expression Index and its 4 component scales, as well as the State Anger and Trait Anger scales.

We also expected high satisfaction ratings for the intervention from a measure of usability. Originally, we had planned to compare satisfaction ratings of the *Options* curriculum with ratings of the Center=s current activities on anger management, but these proved to be virtually non-existent. We set a criterion level for satisfaction with the *Options* curriculum at .7 (or a rating of 7 on a scale of 1-10, where 1 is the worst and 10 is the best), because we felt it represented a high, but achievable, standard.

Results

Preliminary Analyses.

We began by examining differences between our two experimental groups on all demographic information from the Background Information questionnaire. We conducted independent samples *t*-tests and/or chi-square analyses on all demographic information from the Background Information questionnaire to detect any systematic differences between the two groups. Using an alpha level of .05 we found a significant difference between groups for previous contact with the juvenile court system. Specifically, youth in the intervention condition were significantly more likely to have had contact with a juvenile court, $\chi^2(1, N = 82) = 6.79$, $p <.00$, than those in the control condition.

We also noted that the two experimental groups appeared different at baseline on both outcome variables, in spite of the fact that procedures for randomly assigning subjects to groups were indeed followed. When comparing the means at baseline by group, the treatment group showed lower mean scores than the control group on the ACS (means were .46 and .51, respectively); and higher mean scores on the STAXI-2=s AEI (means were 53.7 and 41.4, respectively). These differences were significant at an alpha level of .05 (see Appendix D, Table 3 for group means of both measures and all scales and subscales for the STAXI-2 by group at pretest and posttest).

Content validity was estimated for the ACS using the scales and subscales of the STAXI-II as the criterion measure. Using the Bonferroni procedure to control for Type I error, we found significant correlations ($p < .004$) between nine of the twelve STAXI-2 subtests. Negative correlations (.30 - .43) were found between the ACS and subscales measuring both state and trait anger and expression, including the Anger Expression Index of the STAX-2. Positive correlations (.34) were found between both subscales measuring anger control.

Assumptions of MANCOVA.

Our study used a pretest-posttest design with a control group. Because we also used random assignment to groups, this experimental design was able to adequately control for all main threats to internal validity (Shadish, Cook, & Campbell, 2001) and allow for more powerful statistical analyses through the use of a covariate. Given the power of our experimental design, we wished to address our research question using a

multivariate between subjects analysis of covariance (MANCOVA). MANCOVA has superior power for detecting differences on multiple dependent variables within a study. In this design, group served as the independent variable with two levels: intervention and control. Quantitative pretest scores on both the ACS and the STAXI-2 Anger Expression Index were used as the covariate, and posttest scores on these same measures were used as the dependent variables.

Given our choice of experimental design, many of the theoretical assumptions of ANCOVA were met, primarily that we demonstrated an adequate control of sources of extraneous variability. However, before proceeding, we also needed to evaluate the statistical assumptions of this procedure: (a) multivariate normality, (b) homogeneity of regression between the covariate and dependent variables, (c) reliability of the covariate(s), (d) lack of multicollinearity within the dependent variables, and (e) independence of group and covariate(s). The results of these tests are summarized below.

Using visual analysis of histograms, we found the distributions in pre- and posttest scores on both measures to approximate normality. No outliers were found, nor were there any ceiling or floor effects noted. We also used visual analysis of scatterplots to examine linearity of relations between and among the dependent variables and covariate. All scatterplots indicated moderate linear relations, however the covariate was not highly correlated with the Anger Expression Index, $r = .04$, $p = .71$.

We assessed the reliability of our covariate using unequal-length Spearman Brown coefficients, and found moderate evidence for internal consistency (.63). Stability of the ACS was assessed by examining the correlation between forms for pre- and posttest. Results were modest ($r = .46$). Salvia & Ysseldyke (2004) recommend reliability coefficients at or above .60 for use in making group research decisions. Convinced that the ACS possessed sufficient reliability for use as a covariate, we began the model selection procedure to choose the most appropriate analysis for dependent measures.

Selecting Appropriate Model.

Because we conducted an analysis using a covariate, we considered multiple models and accepted the most parsimonious. The first model, unequal slopes and unequal intercepts, was abandoned, because the differences in slopes across the groups were neither significant (F (1, 78) = 0.04, $p = .85$) nor important ($\eta^2 = .00$).

We found the slopes in the MANCOVA model to be significantly different from zero for the ACS measure only. We therefore chose to analyze our ACS data using ANCOVA model 2, assuming equal slopes and unequal intercepts. The data for the STAXI-2 Anger Expression Index were analyzed using model 3, one without a covariate.

Outcome Analyses

Knowledge of Anger Concepts and Skills (ACS).

All output for the ACS is based on an equal slopes ANCOVA model. The main effect of the intervention on Knowledge of Anger Concepts and Skills was both significant F(1, 79) = 19.61, $p < .00$, and meaningful, $\eta^2 = .20$ and indicated that scores were, on the average, higher for those students who had participated in the intervention (see Appendix D, Table 4 for group means on the ACS at posttest, and Table 5 for a summary of the ANCOVA results). Approximately 20 percent of the variability in posttest scores was due to the effect of the intervention.

STAXI-2.

Output for the STAXI-2 scales is based on an ANOVA model. The main effects of the intervention were not significant for any of the scales: AEI, F(1, 79) = 0.39, $p = .54$, $\eta^2 = .01$; AEI Expression-Out, F(1, 79) = 0.31, $p = .58$, $\eta^2 = .00$; AEI Expression-In, F(1, 79) = 0.32, $p = .58$, $\eta^2 = .00$; AEI Control-Out F(1, 79) = 0.19, $p = .67$, $\eta^2 = .00$; AEI Control-In, F(1, 79) = 1.54, $p = .22$, $\eta^2 = .02$; State Anger, F(1, 79) = 0.10, $p = .75$, $\eta^2 = .00$; and Trait Anger, F(1, 79) = 0.00, $p = .96$, $\eta^2 = .00$.

(See Appendix D, Table 4 for group means on the scales at posttest, and Table 5 for a summary of the ANCOVA results).

As previously reported, scores on the STAXI were significantly different between groups at baseline, which possibly precluded detecting differences between groups at posttest. It is worth noting, however, that the treatment group showed substantially greater improvements on mean scores *for all scales of the STAXI* when compared with the control group. Pretest differences for all STAXI scales were washed out at posttest by these gains.

User Satisfaction.

Our final analysis examined the user satisfaction data for the intervention group (see Appendix D, Table 6 for means on the individual items and the overall user satisfaction rating). Job Corps students in the treatment group expressed great satisfaction with the *Options to Anger* program, both in their quantitative ratings on the satisfaction questionnaire items and in their open-ended comments at the end of the usability questionnaire.

Of the 12 items using a scale of 1 (*not at all*) to 10 (*a lot*), 7 items received mean scores of 7.00 or higher. To highlight a few of the findings, overall, participants found the program easy to understand, giving it a mean rating of 7.89. They also considered it useful for themselves (*M* = 7.57) and thought it would be useful for others (*M* = 8.03). Participants gave their lowest rating to how much they liked the work on the computer (*M* = 5.76), although they liked the virtual teens in the computer class, the animated stories on the computer, and the drag-and-drop activities on the computer (giving them mean ratings of 8.03, 7.78, and 7.00, respectively). On these same 12 items, participants gave their highest rating to the regular classroom activities, which included viewing the multimedia *Options to Anger* segments on DVD (*M* = 8.32).

A final global satisfaction item yielded the highest rating on the questionnaire, with a mean rating of 9.35.

Participants could also provide open-ended comments about the program. In general, the comments were extremely positive; the following examples are illustrative:

AMost of all, being in this program made me thing a lot about some of the stuff that I have said or done that I could=ve handle it a lot more Respectfully and Responsibly.@

AIf you participate in class and do the work on the computer it deffinately helps. I express my feelings a lot more now than I ever did before.@

AI think Option to Anger class really works alot for angry people. It works alot, like when I get mad I think of Option to Anger. And I tell people what I learn even to the staffs in job corps. I think it change me alot and I wish it could keep going this class to alot of people. I ! OPTION TO ANGER....@

AI feel like a better person because of it. Thanx a lot.@ (On the overall rating question, this girl crossed out the A10" and wrote in A100.")

Perhaps the most powerful comment made by a participant was the following:

AIt stoped me from hating and hitting women. . . . thanx yo!@

The only less-than-enthusiastic comments were from a participant who experienced problems with the computer and from two older participants, who thought the material would be more helpful for younger people.

Discussion

The development effort in Phase I produced an attractive, comprehensive, and contemporary multimedia program for at-risk youth on managing anger. Producing the media and curricular materials for the program involved an intensive collaboration between the authors of the original *Options to Anger* program and our project team. All anticipated production milestones were successfully achieved in Phase I (see page 1 of this report for the list of Phase I milestones). We produced a complete, fully updated, and formalized curriculum that was published in a professionally illustrated Facilitator=s Guide. We designed, programmed, performance-tested, and launched all online activities for the *Options* program on our Vstreet.com site. We also created a DVD version of the story segments that instructors and students could view on a TV monitor in the class. The

content and look of all the materials was, in part, a reflection of having observed the entire *Options* training program in process, which also helped us create the virtual teen characters and their poignant stories.

We had a terrific opportunity to interview and obtain feedback from at-risk youth at a crucial point in the development process, which we were then able to incorporate in the materials. We also thoroughly tested the performance of the media materials and closely reviewed the instructional content. The result was a smooth implementation of the program with our participating Job Corps center.

We were very pleased to be able to work with the Job Corps. This was our fourth evaluation study with a Job Corps center; two were in the state of Washington and one in Arizona. This was a valuable testing site for us, and securing the center=s cooperation led us to a deep appreciation of the obstacles in piloting a new and comprehensive program within a large national organization. These resistances, which included the logistics of fitting in a new program in an already dense schedule and making additional resources available, were overcome mostly because our product resonated with the Center=s director, who was forward looking and recognized the potential value of our program. It was also an opportunity for him to take an early step in Job Corps= efforts to transform its social skills training program.

Two staff trainers at the Center were selected to coordinate the study activities and implement the *Options* program. They were given initial support and guidance from the project team to insure their understanding and to clarify any questions they may have had. However, these trainers were well-versed in implementing social skills training with youth at this Center, and needed relatively little time to apprehend the content and approach of the *Options* program.

The Center provided the necessary space, resources, and scheduled time for the training. The only strain we encountered was with the computer resources. The computer lab was in high demand and, currently, the Center provides only marginal user support at the lab. This current limitation probably accounted for the relatively lower satisfaction ratings with the curricular activities on the computer. In the last few years, however, the use of computers and the Internet has dramatically increased at most Job Corps centers. The importance of using electronic media and the dedication of resources will continue to increase even in the very short-term future throughout the Job Corps. Thus, we do not believe this will continue to be an issue at Job Corps, especially among the many centers that are more technologically oriented.

Coordinating the recruitment, scheduling the classes, and administering the testing was relatively problem free, in part because Job Corps centers are highly structured and well-supervised environments. As was evident in the satisfaction ratings, students truly enjoyed the program. We also had the opportunity to observe several of the classes and were impressed by the skill of the trainers and the keen interest and cooperation shown by youth. It was very clear to us from the stories youth brought to the class that the topics had immediate relevance to their lives at the Center. These youth showed a high degree of candor and sincerity in telling their anger stories and in applying the concepts and skills of the program. Trainers gave us many anecdotal examples of youth using these skills in problem situations, which are not infrequent among this peer group.

The good feelings about the program at the Center were supported by our findings. The *Options* program entails a fairly sophisticated set of concepts and skills. And it also requires framing understandings in relation to anger B a problem that is deeply entrenched in many of these youth and which they often see as a primary mechanism of survival. Moreover, as discussed, these youth have histories of failing in school and being turned off to instruction. These are formidable challenges to overcome. We were particularly encouraged, therefore, that youth in the treatment group showed strong and meaningful gains in their knowledge of the specific concepts and skills of the *Options* training. This seemed to confirm anecdotal reports by the trainers that youth were using these skills to constructively solve conflicts.

An unexpected occurrence in the study was the difference in groups at baseline, in spite of random assignment. Namely, the scores on all outcome variables were poorer for the treatment group than for the control group. We will remedy this in Phase II by assessing group equivalence after pretest and either increasing the sample or re-assigning youth to assure group equivalence. When looking at the background

information, it became clear that youth in the treatment group were indeed a higher-risk group, as evidenced by their greater contact with the juvenile court system. Thus, it made sense that they would have a poorer understanding of anger management skills.

This difference was also fully consistent in relation to the STAXI-2, which measures various aspects of youths= state of anger. Here, changes from pre to post did not overcome group differences at baseline. As we noted, however, when looking at mean scores, the treatment group showed consistently greater improvements across all 11 scales and subscales, as well as the index, when compared to the control group.

Our reliability and validity testing provided sufficient confidence in our measure of knowledge, which we developed in-house. Correlations between the ACS and STAXI-2 showed that the ACS and STAXI-2 were tapping a similar construct. Test-retest and internal reliability of the ACS were adequate and can be further improved in Phase II by adding items and piloting in-house measures.

In summary, Phase I provided key quantitative and qualitative results supporting the efficacy of a comprehensive multimedia program on anger management with a group of at-risk youth. Consequently, the Angell Job Corps center is planning to integrate the *Options* curriculum into its ongoing social skills training activities. Our alliance with the Angell Job Corps center also provided important evaluative information for Job Corps nationally. Recently Northwest Media was chosen by the Job Corps national office to participate in a select pilot study to determine the set of materials Job Corps will endorse in the near-term future for its revamped social skills training program. *Options to Anger* will continue to be piloted by a number of Job Corps centers and has a strong possibility of becoming a staple of the materials Job Corps will support throughout its centers.

Milestones for Phase II

Our plans for Phase II remain as previously stated:
X   Develop flow charts for the social skills program, the victim empathy program, and the self-management planning wizard.
X   Build program content.
X   Conduct reviews with experts on the preliminary program content and functions.
X   Program a functioning browser-based prototype of the program.
X   Alpha test the program with youth.
X   Write a trainer=s guide on program implementation for staff.
X   Conduct evaluation studies of the program components with youth in Job Corps.

We have also added B in Phase I and will continue in Phase II B a DVD version of the animated media materials.

Abstract of Research Plan for Phase II

The research plan remains as stated in the original application, with the exception, as stated, that we will continue working with Job Corps. We will be using the same measures we specified in the original application, as follows:
X   For social skills and responsible decision-making: *Test of Community-Based Social Skill Knowledge.*
X   For victim empathy: *Interpersonal Reactivity Index* and *Knowledge of Victim Empathy Concepts and Skills.*
X   For self-planning management: *Usability*, *Youth Engagement and Record Review (from staff).*

Commercialization Plan fo Phase II

The Commercialization for Phase II remains as proposed in the original application.

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Appendix A

Options to Anger
Facilitator=s Guide

Appendix B

Logging-In Instructions for
Options to Anger
on Vstreet

To view *Options to Anger* on *Vstreet:*

1) Go to Vstreet.com on the Internet
   - Use a broadband connection to the Internet.
   - Have your computer speakers on or use a headset for the audio portion of the program.

2) Logging in to Vstreet.com
   We have created six Guest Accounts that will provide reviewers with full access to Vstreet and the *Options* curriculum for 60 days.
   - Choose and then enter one *Login Name* from one of the Guest Accounts:
     Review1, Review2, Review3, Review4, Review5, or Review6
   - Enter the *Password:* options05
     The same password is used for all the reviewer accounts.

3) Go to the *Options to Anger* activities on Vstreet.com
   - Click on one of the *Options* books on the top of the bookshelf in the V-Room.
     We recommend beginning with *The Story* book.

Reviewers may return to the curriculum at any time to continue, repeat, or review any activity.
Reviewers may also explore all other activities on Vstreet.

Appendix C

Options to Anger
DVD
Bleeped Version
(An un- bleeped version was also produced.)

Appendix D

Tables
Phase I Study

Appendix E

Measures
Phase I Study