Coaching to Enhance Quality of Implementation in Prevention

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Abstract

Purpose—This study describes topics covered by coaches assisting teachers implementing a research-based drug prevention program and explores how coaching affected student outcomes.

Design—The All Stars drug prevention curriculum was implemented by 16 urban teachers who received four coaching sessions. Two coaches participated. Coaches were interviewed by investigators to assess topics covered. Students completed pretest-posttest measures of mediators and substance use behaviors.

Findings—The average teacher was coached on 11.7 different topics, out of a total of 23 topics. Coaching topics most heavily emphasized included: introduction and wrap up; time management; general classroom management; teacher's movement around the class; asking open-ended questions; using students' questions, comments and examples to make desired points; general preparation; engaging high-risk youth; reading from the curriculum; implementing activities correctly; focusing on objectives and goals; maintaining a focus on the task; and improving depth of understanding. Seven coaching topics were found to relate to changes in student mediators and behavior.

Research Limitations/Implications—The current study was exploratory. Future research should explore how teachers develop the particular skills required by prevention programs and how coaches can assist them.

Practical Implications—We postulate five levels of skill development which coaches may address: (1) fundamental teaching skills, (2) mechanics of program delivery, (3) development of an interactive teaching style, (4) effective response to student input, and (5) effective tailoring and adaptation.

Originality/Value—This represents one of a very few studies that explores how coaching impacts outcomes in substance abuse prevention.

Due in large part to priorities dictated by the US Department of Education's Principles of Effectiveness and SAMHSA's National Registry of Effective Programs and Practices (NREPP), research based prevention programs are experiencing widespread dissemination. Unfortunately, there is evidence that, in practice, prevention programs are rarely implemented exactly as intended (e.g., Hallfors and Godette, 2002) and prevention programs often fail to achieve positive outcomes when they are not well implemented (e.g., Dusenbury et al., 2004).

One strategy for improving quality of implementation is provide teachers with coaching, including tailored advice and feedback, since it is expected that coaching would help teachers understand what program developers intended and actively encourage them, as they are in the process of teaching, to follow curriculum instructions closely. This idea has generated some support in the research literature and a number of methodologies for coaching have been proposed and investigated (Bowman & McCormick, 2001; Mello, 1984; Showers, 1982; Veenman, et al., 2001). Nonetheless, little has been written that is specific to the potential for coaching to improve the quality of implementation in substance abuse prevention programming, which has developed its own discrete content and methods.

Training and ongoing support are among the most common strategies for increasing quality of implementation (Dusenbury et al, 2004). Teacher training has long been recognized as essential to high quality implementation of curricula in education generally (Basch, 1984; Fullan, 1985; McLaughlin and Marsh, 1978; Patterson & Czajkowski, 1979), and is also viewed as an essential element of effective prevention programs (e.g., Payton et al., 2000; Dusenbury & Falco, 1995). Indeed, most drug abuse prevention programs offer an initial training that lasts one to two days (Drug Strategies, 1999). However, this type of training is introductory and does not provide opportunity for teachers to fully master concepts and techniques (CASEL, 2003).

There is a general consensus that training and ongoing support are important to high quality implementation (CASEL, 2003; Dusenbury, et al., 2004), however very little is known about how best to support teachers following training in the field of drug abuse prevention. There is, however, an extensive education literature that supports using peer coaches or to train teachers to mastery (e.g., Darling Hammond & McLaughlin, 1995; Monahan, 1996; Ralph, 2000; Showers, 1984) and that may help inform ongoing support strategies in drug prevention.

Literature from the Concerns based Adoption Model (C-BAM, Loucks-Horsley, 1996) suggests that individuals adopting new teaching strategies go through predictable stages that can be facilitated by coaching and mentoring. An effective coach provides an objective viewpoint and meaningful feedback (Mello, 1984) during the process of developing new skills, and in addressing concerns at each level of change, from increasing awareness and providing information early on, to mastering basic mechanics, to finally achieving the broadest impact. Supportive coaches are a natural source of motivation, support and inspiration (McCormick & Brennan, 2001; Spouse, 2001) and can help teachers use new strategies (Bierman et al., 2002). Feedback is likely to help teachers view their behaviour and interactions with students with a greater degree of objectivity (Jones & Nesbitt, 1972), and can also set the stage for deeper reflection and analysis (Veenman, Gerrits & Kenter, 2001).

The research on coaching teachers to mastery in drug abuse prevention is limited to three randomised controlled trials. Coaching in these studies was designed to provide teachers

with feedback following observations. However, coaching was not the primary focus of any of these studies. The authors of these studies did not provide specific information about the content of coaching sessions or how differences in coaching might have affected student outcomes. Despite these limitations, these earlier studies suggest that coaching as generally defined has the potential to improve teachers' performance on measures of fidelity as well as their effect on students' performance on standardized tests, reduced intentions to use drugs, and improved social skills (Allison, Silverman, & Dignam, 1990; Abbott et al., 1998; Harachi et al., 1999).

Why is coaching likely to be effective in enhancing the quality of implementation of drug abuse prevention programs? Unlike an initial training workshop that might introduce abstract information about prevention concepts or teaching methods (Tortu & Botvin, 1989), coaching is typically applied in the context of real-life settings (van Driel, Bejaard & Verloop, 2001) as teachers are in the process of implementing a program, so that advice becomes more relevant and meaningful (Joyce & Showers, 1988; Showers, 1984).

Our model of coaching derives from practice and research literature (e.g., Ager & O'May, 2001; Loucks-Horsley, 1996; NIRN, 2004). Specifically, the approach to coaching we developed was both flexible and opportunistic, and designed to vary with the particular needs and proficiency of participating teachers (NIRN, 2004). Coaches were instructed to address the individual needs of teachers. When teachers needed help with the basic mechanics of delivery and adherence, our coaches paid particular attention to opportunities to improve their performance related to specific skills required by the prevention program.

The program selected for implementation was All Stars, a middle school classroom-based curriculum which previous research has shown is effective at deterring the onset of adolescent substance use and sexual behaviour, and reducing violence by changing five specific variables thought to mediate program effects (Hansen, 1996b; Harrington, et al., 2002; McNeal, et al., 2004): lifestyle incongruence (viewing substance use as incongruent with personal values), normative beliefs, personal commitments, bonding to school, and parental attentiveness. Each session of the curriculum is designed to affect at least one of the curriculum's mediating variables. The curriculum consists of 13 required sessions administered to the entire class during classroom time. The program is designed to be interactive and includes cooperative learning activities, games, demonstrations, and general discussion. Homework is assigned to increase interaction between students and parents.

During the period when teachers were implementing All Stars, coaches made every effort to ensure a continued high level of motivation and confidence on teachers' part in regards to implementing the curriculum (Schoenwald et al., 2004; Walker, Koroloff, & Schutte, 2002). Teachers who had mastered the mechanics of program delivery often needed help from coaches on improving the quality of their interaction with their students. Teachers who had mastered the initial mechanics of delivery were then ready to understand more fully the underlying concepts of a program. They also tended to need help to become effective change agents for improving the mediators that were targeted by the program. If the fundamentals were in place, coaches were encouraged to assist teachers with higher order concerns such as how to reach high risk youth, particularly those who were not actively engaged during classroom activities. The coaching process focussed initially on building a relationship between the coach and the teachers, so that the teacher would come to trust the coach and respect what she had to say.

The purpose of this study was to explore and describe the topics coaches covered with teachers during coaching sessions, to investigate how teachers responded to coaching, and to examine whether coaching on various topics produced improvements in student outcomes

measured as both mediators and behaviours. A final objective was to formulate hypotheses about how teachers develop the skill and understanding to become effective implementers of prevention programs.

Methods

For this project, the All Stars curriculum was implemented by 16 teachers who received coaching. Participating teachers were expected to teach at least one All Stars class per year to a class of seventh graders in middle schools.

Teacher Participants

A total of 16 teachers from a large Midwestern, urban school district participated in this project. Mean age of teachers was 40.4 years. Nearly three quarters of the teachers (74%) were female. Half (52%) of the teachers were African American, a third (34%) were White, and 9% were Hispanic.

Two individuals with experience in teaching and prevention programming served as coaches, both of whom were African American. Each had experience teaching All Stars under the supervision of the program's national training leader.

Teacher Measures

Data for this study came from a series of interviews conducted by members of the research team with the two coaches. To begin the process, the senior author conducted telephone interviews with each coach, during which coaches were asked to describe the coaching process they followed. In order to develop individual case studies for each teacher, the senior author took detailed handwritten notes as the coach described not only the coaching process, but also specifics about the context in which teachers taught, their background and experience, job stress, and other personal and professional challenges. Descriptions were summarized and reviewed with another team member with the goal of identifying an extensive list of coaching topics.

The initial list of topics was then returned to the coaches, who were asked whether or not they had addressed each topic with each teacher. In addition, based on data from the initial interviews, researchers also reported whether coaching on each topic was provided to each teacher. There was marked disagreement between coaches and researchers. It became clear that topics needed refined definitions and new topics needed to be included. As a result, a third iteration of the list of topics was developed, and each topic was given an operational definition, which are presented in Table 1. Twenty three coaching issues were ultimately identified.

Coaches were guided through a final interview by members of the research team. The coach's initial ratings and the researchers' ratings were used as a starting place to guide discussions. For each teacher and each of the 23 coaching topics, ratings were provided using a 0 to 2 scale (0 = no coaching, 1 = minimal coaching, 2 = extensive coaching). These ratings were then discussed until consensus was reached by both coaches and researchers as to what was (and was not) the focus of coaching.

Teachers' Subjective Ratings of the Coaching Process

Teachers were also asked to assess the coaching they received, using a 4-point scale ranging from "definitely true" to "definitely not true" to report whether they: liked being coached on how to teach All Stars, found the advice of their coach useful, and thought the time they spent on coaching was well spent. They were also asked how often their questions of

coaches were answered, using a 5 point scale that ranged from "I did not ask questions" to "often". In addition, teachers reported how helpful the coach's answers were using a 6 point scale that ranged from "I did not ask questions" to "very helpful".

Student Participants

Parents of students in All Stars classes received a consent form; 91% of eligible students participated. One class of students for each teacher participated in the student survey, resulting in a total of 408 students in the 18 classes. The mean number of students per class was 25.5. Students' average age at pretest was 12.5, and the majority were African-American, while slightly more than a quarter were self-identified themselves Hispanic or Latino.

Students completed two surveys, before and after their exposure to the All Stars curriculum. Students received individual survey packets containing an assent form as well as a copy of the questionnaire. We tracked student ID using a unique bar code that was linked to each student's name. Teachers involved in the project collected signed student assent forms prior to administering the questionnaires to the students in their classes. We asked teachers to remain at the front of the classroom during survey administration to emphasize our assurances to students that their responses would remain confidential. The questionnaire took an average of 20 minutes to complete. When they had completed their questionnaire, students sealed it in a blank envelope we provided and placed it in a box at the front of the class.

Student Measures

The student survey instrument included measures of problem behaviour as well as mediators. The survey also asked whether students had, in the last 30 days, smoked a cigarette, used smokeless tobacco, taken more than a sip of an alcoholic beverage, been drunk, used marijuana or inhalants. The drug use measure was created using an average of students' responses to individual items about past month (30-day) use of alcohol, cigarettes, smokeless tobacco, marijuana, and inhalants, as well as self-reported frequency of drunkenness. Students' scores were aggregated at the teacher level, so that each teacher had a single class substance use score. Posttest means were subtracted from pretest means; scores below zero indicate a pretest to posttest reduction in overall substance use whereas scores above zero indicate increased use from pretest to posttest. With substance use behaviour a negative change is desired.

In addition to the behaviour measure, the student survey assessed five mediators targeted by the All Stars curriculum: lifestyle incongruence, normative beliefs, commitment, bonding to school, and positive parental attentiveness. Items on these measures utilized response options that ranged from "strongly disagree" to "strongly agree." Previous studies that used these scales obtained alpha coefficients that ranged between .67 to .90 (Fearnow-Kenney et al., 2002; Hansen & Dusenbury, 2004; Harrington et al., 2002; McNeal et al., 2004)

Lifestyle Incongruence consisted of 11 items (e.g., "I will have a happier life if I stay away from alcohol"). The pretest alpha coefficient obtained in this study was .76. Normative Beliefs consisted of 12 items (e.g., "My friends think smoking cigarettes is cool"). The normative beliefs scale included items that asked students to estimate what proportion of people their age used alcohol, tobacco, marijuana, and inhalants. The pretest alpha coefficient in this study was .82. Commitment consisted of 11 items (e.g., "I have made a decision not to get high by sniffing fumes"). The pretest alpha in this study was .83. School bonding consisted of seven items (e.g., "I like the teachers in this school"). In this study the pretest alpha was .78. Positive parental attentiveness comprised seven items (e.g., "My

parents often talk with me about things they think are important"). In this study, the pretest alpha was .77.

We adjusted items so that higher scores represented more desirable outcomes (e.g., greater bonding to school) and lower scores were less desirable outcomes (e.g., beliefs that all of their peers use alcohol). As with the substance use measures, students' scores on mediators were aggregated at the teacher level. Posttest means were subtracted from pretest means; scores below zero indicate a pretest-to-posttest reduction in the mediator whereas scores above zero indicate the mediator increased from pretest to posttest. With mediators, a positive change score was desired.

Coaching Procedures

Teachers videotaped their implementation of All Stars for all sessions of the program. Teachers who had multiple classes to which they taught the curriculum were instructed to videotape the first class in their daily schedule that they taught. Coaches reviewed videotapes and completed an observation form tailored to each lesson. This form asked coaches to note whether or not teachers completed the steps in each activity and prompted them to record any adaptations. Summary questions asked coaches to make observations about what went well, what challenges were evident, and what could be improved. Coaches used their observation forms to prepare for coaching sessions. Coaches then reviewed their observations and plans for coaching with the program's lead trainer.

Each coach worked with an assigned set of teachers whom they initially met at training workshops. Following training, coaches visited teachers at least four times as they taught All Stars, and spoke to them by telephone at least once a month. During the first visit coaches spent time getting acquainted and establishing a relationship.

Coaching sessions were scheduled at the teacher's convenience and generally lasted about an hour. Coaches typically began their visits by complimenting the teacher on some genuinely praiseworthy behaviour that the coach had observed in the videos. As much as possible, coaches let teachers lead the coaching session. Coaches typically asked their teachers to talk about what went well or was challenging, and then to specify particular issues they would like to discuss. Once teachers' issues had been addressed, coaches discussed any remaining issues that had emerged based on their observations of the videotapes. Coaches ended with a discussion of how teachers planned to improve the quality of their implementation. Within a general framework that encouraged coaches to address topics that related to improving quality of implementation, they were given extensive freedom in regards to the topics on which they chose to focus.

Data Analysis

Because this study was exploratory, descriptive statistics (including means and standard deviations) were calculated. We then created Pearson product moment correlation coefficient matrices to examine the relationships between coaching topics, teacher response to coaching, and student outcomes.

Results

General Observations about Teachers and Coaching

A number of important issues emerged from a qualitative analysis of our interviews with coaches. The majority of schools in this project served low income students and many were in high crime areas, some of which included rival gangs. Based on their initial interviews with coaches, teachers often faced a variety of personal challenges that affected their

teaching as well as their availability for coaching. Some teachers had second jobs or were continuing their education. Many had young families; others had health issues themselves or in their families. Many of the teachers in this study faced extensive responsibilities and pressures, in part because of budget cuts and reorganization in their schools. Some teachers had multiple new roles in their schools, while others faced the possibility of lay offs or transfers. Personality issues also became an issue with coaching relationships. Some teachers were resistant or difficult to work with, and others had students who were unmotivated or challenging.

The match between coach and teacher was important, and coaches adapted their styles to meet the needs of teachers. For instance, coaches reported that some teachers were only responsive to a supportive relationship, while others appreciated directive feedback. Coaches reported that they attempted to be sensitive to the most appropriate style for each teacher.

Coaching Topics

The average teacher was coached on 11.7 different topics, and the number on which they were coached ranged from 5 to 19. The most commonly addressed topic (omissions of session introductions or conclusions) was discussed with 84% of teachers, and the least discussed topic (using humour) was discussed with only 11% of teachers. On average, coaches addressed each topic with about half the teachers (51%). Whether or not a topic was discussed at all was highly correlated ® = .96) with the intensity with which it was discussed.

Topics that were most heavily emphasized (i.e., received greater than average scores) and discussed with teachers included: introduction and wrap up; time management; general classroom management; teacher's movement around the class; asking open-ended questions; using students' questions, comments and examples to make desired points; general preparation; engaging high-risk youth; reading from the curriculum; implementing activities correctly; focussing on objectives and goals; maintaining a focus on the task; and improving depth of understanding (see Table 2).

Teacher Subjective Response to Coaching

To assess how teachers responded to coaching, means and standard deviations were calculated for the subjective ratings of coaching experience. See Table 3. In general teachers rated the coaching experience highly.

To further explore teachers' subjective reaction to coaching as it related to coaching topic, we created a correlation matrix between the coaching topics identified by the coach and the teachers' ratings of their coaching experience. With only 16 cases, a high correlation was required to achieve significance. For example, using a two-tailed test, a correlation of .48 was required to reach significance at the .05 level. Table 4 presents the results of the correlation matrix. Table 4 only includes variables for which there was at least one significant relationship. Further, because the values of 3 items (liked coaching, advise was useful, and time being coached was well-spent) were identical, these items were presented together.

Few of the topics coaches covered related to teachers' response (positive or negative subjective ratings) to coaching, with three exceptions. First, teachers who were coached on their respect for the program appeared to have had a consistently negative subjective response to coaching. Specifically, teachers who were coached to have more respect for the program were less likely to (1) like the coaching experience, (2) find the coach's advice useful, (3) view the time spent in coaching as well spent, (4) feel they got answers to

questions they asked during coaching, and (5) find the answers they got during coaching helpful.

Second, teachers who were coached on their use of humour also appeared to have a negative response to the coaching process. There was a significant negative correlation between the degree to which the coach discussed the teacher's use of humour and (1) how much teachers liked the coaching experience, (2) the extent to which they viewed the time in coaching as well spent, and (3) the extent to which they found the answers they got during coaching helpful.

Third, in contrast to these negative reactions to coaching, teachers who were coached on engaging high risk youth had a very positive response to coaching. There was a significant positive relationship between the degree to which teachers were coached on how to reach high risk youth and (1) how much the teacher liked the coaching experience, (2) how useful the teacher found the coach's advice, and (3) the extent to which the teacher viewed the time in coaching well spent.

Student Outcomes Associated with Coaching

We also sought to explore whether and how coaching on specific topics might affect student outcomes. A correlation matrix was created between intensity of coaching on specific topics and student change scores on mediators and behaviours. See Table 5. Again, because there were only 16 teachers for whom data were available, a correlation of .48 was required to reach significance at the .05 level.

Seven of the 23 coaching topics were related to changes in student mediators and/or behaviour. These 7 coaching topics included: time management, using humour, skipping content, getting parents involved, building self confidence to teach, movement in class, and engaging high risk youth.

We had expected that there would be a positive relationship between coaching topics and All Stars' mediators, since coaching was expected to positively affect mediators through its impact on quality of implementation. In contrast, we expected a negative relationship between coaching topics and substance use behaviours, since coaching was expected ultimately to reduce drug use.

The relationships between coaching topic and student outcomes was in the expected direction for the following topics: using humour, skipping content, getting parents involved, building confidence to teach, and engaging high risk youth. Coaching about using humour was positively correlated with changes in the student mediators of parental attentiveness; coaching about using humour was negatively correlated with fighting. Coaching on skipping content activities was positively correlated with changes on lifestyle incongruence and parental attentiveness. . Coaching about getting parents involved was negatively correlated with drug use. Coaching on building self confidence to teach was positively correlated with changes in the student mediator of bonding. Coaching on how to engage high risk youth was negatively correlated with changes in drug use.

The relationship between coaching and outcomes was not in the expected direction for two coaching topics. Coaching on time management was found to negatively correlate with change in the student commitment mediator and coaching on movement in class was found to negatively correlate with the student mediator of commitment.

Discussion

This study examined how coaches work with teachers implementing a research based drug abuse prevention program, and how coaching impacted student-level outcomes. Interviews with coaches revealed that a wide variety of topics were addressed by coaches working with teachers during their first year of implementing All Stars. The 23 topics that we identified ranged from attitudes about the program, to styles of implementation, to developing and mastering the mechanics of teaching and program implementation. The study's finding that coaching on some of these topics was associated with positive outcomes for students in terms of both mediators and behaviour supports the idea that allowing coaches to be flexible in both style and content has the potential to meet teachers' needs.

Specifically, results of this study suggest that coaching teachers on a number of topics is associated with changes in student outcomes for mediators and/or behaviour, including: time management, using humour, skipping content, getting parents involved, building self confidence to teach, and engaging high risk youth. While there was not a strong relationship between coaching on most topics and teachers' subjective rating of their coaching experience, teachers did appear to welcome guidance on how to reach high risk youth, which was also was associated with program impact with regard to substance use.

In contrast, teachers who received coaching on building respect for the program tended to have a negative reaction to coaching. We speculate that teachers who needed to be coached on this topic had a negative attitude toward prevention or toward All Stars, which the coaching may have been unable to ameliorate. Indeed, these teachers may have viewed the coaching process as a further waste of their time. It really may be best, when confronted with a teacher who strongly disagrees with the prevention approach, to allow (or even encourage) the teacher not to administer a curriculum like All Stars.

The finding that teachers who were coached on the use of humour also had a negative reaction to the coaching process is more difficult to explain. It may be that the use of humour has more to do with personality style, so that teachers are more sensitive about this topic than others, and have a more negative reaction to coaching when this issue is raised. Indeed, even if it is diplomatically handled, individuals may not appreciate feedback that suggests that they lack a sense of humour.

The finding that coaching with high risk youth was associated with a positive reaction to coaching was important. We view coaching on high risk youth as a higher order topic, usually reserved for teachers who have mastered the fundamentals of the All Stars program. Teachers who received coaching on this topic may have been actively seeking ways of reaching a small group of students who appeared less involved during classroom discussions and activities, and thus welcomed the opportunity to discuss the issue with their coach. Because coaching on this topic was also related to improved effectiveness in terms of reducing substance use among students, future efforts related to coaching may wish to explore this further.

Coaching on two additional topics was associated with unanticipated outcomes. Coaching on time management and coaching on movement in class were both found to negatively correlate with change in the student commitment mediator. We do now know why this would be the case. Future research will be needed to explore this issue further.

The results of this study suggest that during the first year of program implementation, our coaches placed a heavy emphasis on fundamental teaching and adherence issues. For example, they worked to ensure that introductory and concluding activities. They also helped teachers with general classroom management, a topic not specifically part of All

Stars but clearly important as a fundamental skill for teaching. Because All Stars addresses concepts that are unfamiliar to many teachers and requires the use of novel and highly interactive teaching methods, coaches also spent extensive effort helping teachers understand the importance of preparation to ensure that they understood what they were going to try to achieve and how they would do it. They also coached on avoiding doing activities incorrectly, maintaining focus on the immediate task, objectives and goals specified by the program, and understanding the underlying concepts on which it is based - all fundamental to achieving fidelity in implementation.

It might seem surprising that teachers needed to be convinced of the importance of preparation. It is important to understand that American teachers face multiple and intense demands for their time. Over the past decade pressures emerging from the No child Left Behind Legislation, preparing for standardized testing, as well as administrative concerns about failure to meet (or not) "Annual Yearly Progress", have created a culture in many schools that emphasizes academic performance to the exclusion of everything else. School personnel, including teachers and administrators, often see prevention programs as less important. While most seasoned teachers such as the ones in this study certainly understand the importance of preparation generally, they sometimes give less effort to prevention programs specifically, concluding perhaps that because these programs are not "academic", preparation is less critical. Unfortunately, preparation is critical, particularly since this prevention program relies heavily on interactive techniques, which not all teachers are comfortable using, initially. The coaches therefore felt a need in this project to help some teachers understand the importance of preparation for this prevention curriculum.

Interactivity issues, such as asking open-ended questions and using students' contributions to make desired points, also received the attention of coaches in the first year. Further, coaches spent a fair amount of time helping teachers respond to high-risk youth. Anecdotally, coaches often addressed such issues as how to deal with students in schools with gang problems, and how to gain the attention and cooperation of disruptive students.

Coaches spent relatively little time discussing issues such as using peer opinion leaders, getting parents involved, and understanding how to adapt the program to meet local needs. We suspect that these are advanced teaching issues that can only be addressed after fundamental teaching skills have been developed. Because teachers involved in this study were implementing All Stars for the first time, it is understandable that such issues would not yet be addressed.

Anecdotal reports by coaches suggest that it was very important for them to understand, respect and be sensitive to the multiple demands their teachers were facing. An important role they fulfilled was to offer moral support. Coaches felt it was critical to adjust their style and approach to the style and needs of the teacher. There were, indeed, many teachers who needed extensive personal support that had little to do with the coaches' primary purpose. For example, some teachers needed phone calls to remind them to prepare for the next session. Others were self-directed, using the coach as a sounding board to help them discover, on their own, strategies to improve their teaching. Some teachers were very open to feedback and criticism, others were more defensive. Although most teachers welcomed coaching, some teachers were resistant.

One purpose of this study was to begin developing hypotheses about how teachers develop skill and understanding that allows them to be effective implementers of prevention programs. Based on patterns of coaching, we infer that there may be a hierarchy of skill development that teachers pass through before mastering all the skills and understanding required to change student behaviour. Based on the findings of this exploratory study, and

consistent with the Concerns-based Adoption Model (Loucks-Horsley, 1996), we postulate the following levels of skill development, with the understanding that this is only an initial conceptualisation that awaits further testing and research.

Level 1 Skill Development

Fundamental Teaching Skills. Teachers at this level need help developing fundamental teaching skills, such as general classroom management and understanding how to manage the time they spend doing activities. They often implement activities incorrectly and omit session introductions and conclusions. Further, they have little patience with and appreciation of students who may be acting out because they do not understand what the teacher expects of them. Teachers at this level need coaching to help them develop sufficient skill to get them ready to teach.

Level 2 Skill Development

Mechanics of Program Delivery. Teachers at this level of skill development are ready to teach and master the mechanics of the specific program they will administer. However, they need encouragement to spend more time gaining an understanding of the program's goals and objectives; that is, what the program is trying to change. They often need to develop respect for the program and learn how to show enthusiasm during teaching.

Level 3 Skill Development

Development of an Interactive Teaching Style. These teachers are ready to teach in a way that begins to engage the students and may have mastered many, but not all, of the basics of teaching. They may need continued help in understanding the program's goals and objectives and in learning how to maintain a focus on task and avoid allowing students to subvert the flow of the curriculum by going off on tangents. They may also need to master program mechanics so that they teach the program completely and avoid skipping activities they may not understand or be comfortable with. Beyond this, they may now need to begin developing teaching styles that facilitate increased interaction. Teachers may also need help with developing specific teaching strategies that are individual to their own sets of deficits, such as using humour to engage students.

Level 4 Skill Development

Effective Response to Student Input. Teachers who have mastered teaching skills may be ready to master interactive elements of teaching. These teachers then need to learn to use statements and questions from students productively to further program goals. Prior to this level, teachers should be encouraged to follow program manuals closely. However, once they understand the program's goals and objectives and how it is designed to change students' attitudes and behaviours, there may be value in helping them move away from a close reading of the curriculum. At this point there are additional skills designed to promote interactivity that they may begin to master. There may be some teachers who need assistance learning how to speak without using a monotone, understanding effective strategies for asking open-ended questions and how to get parents involved, knowing how to move around the classroom, and generally increasing the teachers' confidence in their skills.

Level 5 Skill Development

Effective Tailoring and Adaptation. There are advanced elements of teaching that neither of our coaches was ready to address and that most of our first year teachers were not ready to master. We postulate that these constitute an advanced level of teaching skill. These included how to work with peer opinion leaders, how to engage high-risk youth, and the

appropriate versus inappropriate adaptation of the program to meet the needs of special circumstances and populations.

This study was exploratory in nature. Additional research is necessary to explore more systematically how teachers develop the particular skills required by substance use prevention programs and how coaches can assist them in doing so. Future research should not only extend our understanding of the coaching process, but should also examine its overall effectiveness in promoting positive outcomes among students.

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Table 1

Operational Definitions of Coaching Terms

Coaching Topic	Definition
General classroom management.	Coaches consulted with teachers about discipline issues they observed and suggested how to manage and control classes.
Omissions of session introduction or conclusion.	When coaches observed that teachers skipping introductory or concluding activities of a session, they provided instruction related to completing these important components.
Patience and understanding of the students.	When teachers rush students to answer without sufficient time to process discussion questions and express thoughts, coaches encouraged them to allow greater freedom during discussion.
Time management.	When teachers had trouble completing activities, coaches discussed how to pace activities.
Correcting activities done incorrectly.	When teachers made errors in following the curriculum methods, coaches provided guidance about how to do activities.
Showing enthusiasm during teaching.	When teachers did not appear enthusiastic on the videotape, coaches helped teachers develop and show increased enthusiasm for the program with their students.
General preparation.	When teachers appeared unfamiliar with content or methods, coaches emphasized the need to prepare.
Improving depth of understanding.	When it was unclear if teachers understood the ultimate goal of a session, coaches helped them gain increased understanding of the student characteristics targeted for change.
Focus on objectives and goals.	When teachers were observed to stop short of achieving desired responses by students or pursue irrelevant discussion, coaches helped teachers understand the immediate session goals.
Respect for program.	This was coaching designed to promote positive attitudes for the program among teachers who were observed to say or do things that showed a lack of respect for the curriculum.
Using humor.	When teachers presented activities in a way that was not engaging, coaches often discussed how humor could be used to appropriately (i.e., without sarcasm) to enliven teaching.
Maintaining focus on task.	When teachers tended to get sidetracked or allowed students to routinely drift into extraneous conversations, coaches encouraged teachers to develop methods to stay focused.
Avoiding skipping content activities.	When teachers omitted activities (other than introduction or wrap up activities), they pointed out omissions and reviewed the importance and function of the activity.
Using students' questions, comments and examples to make desired points.	Coaches praised teachers for capitalizing on students' questions and comments to make desired points, and when teachers did not do this, they coached them on how to do it.
Reading from the curriculum.	When teachers were observed to read directly from the curriculum, coaches provided constructive feedback and suggestions about how to put information into their own words.
Avoiding the use of a monotone voice.	When teachers had flat, monotone voices, coaches encouraged them to use increased drama and emotion in their presentations.
Asking open-ended questions.	When teachers were observed to have difficulty leading discussions, coaches encouraged teachers to invite student discussion using open-ended questions.
Getting parents involved.	When teachers described having challenges getting homework back or otherwise involving parents, coaches helped teachers develop strategies such as parent training meetings.
Building self confidence to teach.	When teachers appeared intimidated by the curriculum, typically because of the program's demands for interactivity, coaches provided support to help teachers gain confidence.
Movement within the classroom.	When teachers never left the front of the classroom, coaches encouraged teachers to move around the classroom, rearranging chairs and desks to make movement easier.
The use of peer opinion leaders.	When teachers were ready to engage peer opinion leaders, coaches helped teachers understand how to use peer leaders effectively to achieve the objectives of the curriculum.
Engaging high-risk youth.	When coaches observed or teachers described having high-risk youth in their classrooms, coaches helped teachers develop strategies to engage these students in and out of the program.
Appropriate versus inappropriate adaptation.	When teachers asked about making modifications to the program, or when they were observed making uncalled for adaptations, coaches reviewed and provided feedback.

Table 2

Average Ratings of Topics and the Percent of Teachers with Whom Topics Were Discussed

Topic	Average Rating	Percent of Teachers
General classroom management.	1.16	74%
Avoiding omissions of session introductions or conclusions.	1.32	84%
Having patience with and understanding of the students.	0.58	47%
Time management.	1.16	74%
Correcting activities done incorrectly.	0.74	53%
Showing enthusiasm during teaching.	0.58	42%
General preparation.	1.00	58%
Improving depth of understanding.	0.79	53%
Focusing on objectives and goals.	0.74	53%
Showing respect for program.	0.42	21%
Using humor.	0.11	11%
Maintaining focus on task.	0.89	74%
Avoiding skipping content activities.	0.68	42%
Using students' questions, comments and examples.	1.05	68%
Reading from the curriculum.	0.74	53%
Avoiding the use of a monotone voice.	0.32	32%
Asking open-ended questions.	1.05	79%
Getting parents involved.	0.42	37%
Building self confidence to teach.	0.63	37%
Movement within the classroom.	1.11	74%
The use of peer opinion leaders.	0.16	16%
Engaging high-risk youth.	0.89	63%
Appropriate versus inappropriate adaptation.	0.58	37%

Table 3

Descriptive Statistics for Teachers' Subjective Ratings of the Coaching Process

	Range	Mean	Std. Dev.
Liked coaching	1-4	3.83	0.38
Advice was useful	1-4	3.83	0.38
Time being coached was well-spent	1-4	3.83	0.38
Got answers to questions	1-5	4.89	0.32
Answers were helpful	1-6	5.94	0.24
Coached on how to teach	1-4	3.33	0.84
Coached on class management	1-4	2.75	1.00
Coached on student engagement	1-4	3.00	1.08
Coached on high-risk students	1-4	2.83	1.10
Coaching on teaching was helpful	1-5	4.89	0.32
Coaching on class management was helpful	1-5	3.88	1.69
Coaching on engagement was helpful	1-5	4.39	1.29
Coaching on high-risk students was helpful	1-5	4.11	1.49
Teachers liked being coached	1-5	4.47	0.31

Table 4

Correlation Coefficients Between Time Spent on Selected Coaching Topics and Teachers' Subjective Response to Coaching

	Liked coaching, Advice wasuseful & Time being coached was well-spent	Got answers to questions	Answers were helpful
Respect for program	-.590†	-.787*	-.537†
Using humor	-.537†	-.683*	-1.000*
Engaging high-risk youth	.608†	.478	.327

*p< .01

†p < .05

Table 5

Correlation Coefficients Between Intensity of Coaching on Selected Coaching Topics and Student Outcomes

Coaching Topic	Pretest-Posttest Changes in:						
	Lifestyle Incongruence	Normative Beliefs	Commitment	Bonding	Parental Attentiveness	Drug Use	Fighting
Time management	-.329	-.035	-.528†	-.364	-.095	.245	-.391
Using humor	.226	-.024	-.020	.455	.638*	-.016	-.757*
Skipping content activities	.556†	.477	.350	.329	.687*	-.035	-.409
Getting parents involved	.222	.070	.431	.046	.060	-.511†	.162
Building self confidence to teach	.071	.086	.043	.537†	.193	-.087	-.320
Movement in the class	-.314	-.449	-.618*	-.321	-.215	.208	.265
Engaging high-risk youth	.167	.372	.343	-.186	.208	-.685*	.085

Note: Positive correlations with mediators and negative correlations with behaviors indicate improvement with more coaching.

*
p< .01

†
p <.05