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HOW TO THINK, NOT WHAT TO THINK: A Cognitive Approach to Prevention of Early High-Risk Behaviors in Children

by

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Abstract

I Can Problem Solve (ICPS) is a culture-free primary prevention program and treatment program designed for children aged four through twelve. Twenty-five years of research has shown that as early as preschool, ICPS training can reduce and prevent impatience, overemotionality, and aggression—early predictors of later violence, substance abuse, teen pregnancy, and some forms of psychopathology. Trainees learn how to help children increase sensitivity to their own and others' feelings, and improve their alternative solution, consequential, and—in older children—sequenced planning (means-ends) thinking skills. Application of these skills to real life help children build social and emotional competence at home and at school. Its companion program, Raising A Thinking Child, is for use by parents of young children.

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Introduction

When John F. Kennedy called for a "bold new approach" to mental health as early as 1963, he was speaking of prevention, an approach that is "far more economical and...far more likely to be successful" (Kennedy, 1963; quoted by Price, Bader, & Ketterer, 1980, p. 9). In 1979, his brother Edward M. Kennedy chaired a subcommittee on Health and Scientific Research, to which Gary VandenBos, Administrative Officer of Mental Health Policy of the American Psychological Association, submitted, "by failing to be responsive to the emotional/ behavioral problems of children and youth, later problems and costs of dealing with mental health problems of an older population are compounded" (letter dated June 21, 1979, p. 9).

Today, more than ever, it is clear that we must no longer fail to be responsive to emotional and behavior problems of children and youth. There are not enough psychologists and psychiatrists to treat every child and adult in need of mental health services. Almost every day we read about a teenager, sometimes a child, who seriously harms or even kills another human being, usually another teenager or someone younger. The recent 1996 report from the Department of Human Services informs us of increasing drug use among teenagers despite their knowledge of its health hazards.

As described in the 1978 President's Commission on Mental Health, "primary prevention is concerned with populations not yet affected by individual breakdown, especially groups at high risk. It is proactive—it often seeks to build adaptive strengths through education..." (p. 1825). Can the escalating incidence of mental health dysfunction, violence, and drug abuse be prevented? If so, how early?

Research has now identified behaviors as early as preschool that are identified as high risk because they predict later, more serious outcomes as violence, drug abuse, teen pregnancy, school dropout, and some forms of psychopathology. These behaviors include anti-social attacks on peers, inability to delay gratification or cope with frustration, lack of empathy, and poor peer relations (Parker and Asher, 1987). Socially withdrawn behaviors as the inability to stand up for one's rights and fear of entering into play with peers can predict later, more internal problems as depression and, in extreme cases, even suicide (Rubin, 1985).

Although no one technique or intervention can prevent these problems by itself, this paper will describe a competence-building approach to primary prevention called Interpersonal Cognitive Problem Solving (ICPS), later named I Can Problem Solve (also ICPS) that shows promise. This approach is based on 25 years of research by my colleagues and me—research now supported by others nationwide (Shure, 1996a; 1997; Denham and Almeida, 1987). My hope is that school personnel, parent educators and other practitioners who work with children will recognize the potential and the need for primary prevention and that research methodology is now available to suggest that prevention can be demonstrated.

What Is ICPS?

ICPS is a systematic four-month intervention that teaches children how to think, not what to think, in ways that help them successfully resolve everyday conflicts. It is based on Spivack's (1963) theoretical position that there is a set of interpersonal cognitive problem-solving (ICPS) skills that mediate healthy human functioning. One ICPS skill that strongly distinguished behavior groups is the ability to create a

plan to reach a stated goal, a skill called means-end thinking.

• **Means-end thinking, or sequential planning:** *an ability to plan, step by step, means to a stated interpersonal goal.* Such thinking involves an appreciation that obstacles may interfere with reaching that goal (that problem-solving is not always smooth sailing), and in addition, having at one's command alternative means if an obstacle is realistically or psychologically insurmountable. This process also implies a recognition that goals may not be reached immediately and that certain times are more advantageous than others for action. An individual adept at means-end thinking may consider, "I can go visit the boy next door (means) but he won't know me and won't let me in (obstacle). If I call first and tell him I just moved in and ask if I can come over (means), he'll say okay. But I'd better not go at dinnertime or his mother will be mad (time and obstacle) and he won't like me." Perhaps the adolescent wanting that date would consider not calling the night before an important test or the night before the dance.

When comparing adolescents in a residential treatment home who are emotionally disturbed and delinquent with normal youngsters in public schools, Spivack found that regardless of IQ, significant cognitive deficiencies appeared in the former compared to the latter group (Spivack and Levine, 1963). When I joined Spivack, I learned that even in a more homogeneous classroom of normal fifth-graders with varying degrees of behavior problems, not only were impulsive youngsters more deficient in means-end thinking but so too were children who were more socially withdrawn—again, irrespective of IQ (Shure and Spivack, 1972).

Having been a nursery school teacher, I wondered whether ICPS skills could distinguish children who are socially adjusted from children who are behaviorally aberrant. I remembered how children differed in their strategies to solve a problem very important to them—wanting a toy another child had. While most children would first ask, some would, if refused, hit the child, grab the

toy, tell the teacher, or give up and walk away in despair. I also remembered one boy, age four, named Zachary, who wanted a wagon that Peter was pulling. He asked Peter why he couldn't have it, and Peter replied, "Because I need it. I'm pulling rocks." "I can help you pull the rocks," answered Zachary, and the two children went off happily together. They were happy with their own solution. No adult had to intervene. I wondered if Zachary's ability to mesh his needs with Peter's was unusual for a child that young.

Recognizing that means-end sequential planning would be developmentally too sophisticated for four-year-olds, I systematically tested their ability to think of separate, alternative solutions to solve a stated problem, and separate, alternative consequences to an act.

• **Alternative solution thinking:** *an individual's ability to generate options (solutions) that could potentially be put into action to solve a problem.* If a child thinks about hitting another for a toy, and his or her first idea to solve the problem is refused or ineffective, does that child conceive of an alternative way (e.g., trade a toy) to solve the problem?

• **Consequential thinking:** *an individual's ability to anticipate what might happen next as a result of carrying out a conceived solution to a problem.* Does a child who hits another to obtain a toy, whether by emotional impulse or a purposeful decision, also think about what might happen next? Does he or she think, for example, about the possibility of getting hit back, that the victim might tell the teacher and get him or her into trouble, or possibly that hitting might hurt? Does thinking about the possible consequences influence a child's decision to hit?

Alternative solution and consequential thinking are less demanding skills than those of recognizing obstacles as part of an overall plan. The child is only asked to think of one solution at a time, and what might happen next if one particular act is carried out. In addition to these two skills, also

significantly related to behavior in the older age groups, two others have also been identified for four and five-year-olds as well.

• **Awareness of or sensitivity to one's own and other's feelings.** To continue the examples described above, does a child who hits another consider how that act might make the victim feel? If the child who hits considers the potential consequence that he or she might get hit back, does the child even care? Are children who do not think about feelings more concerned about getting what they want than how either they or the other person feels at the time?

• **Causal thinking:** *an ability to understand what precipitated an act.* While consequential thinking refers to what might happen after an act is carried out, causal thinking refers to an event that occurred before that act is carried out. If one child hits another and gets into trouble (consequence), does the original refusal for the desired toy (cause) get forgotten? Does a child who remembers that refusal then try a different alternative solution to obtain his or her wish?

Identified Early High Risk Behaviors

• **Impulsivity.** Youngsters who are overly impatient, who have to have what they want the instant they want it, who fly off the handle when things don't go their way, cannot wait, and are overly aggressive either physically or verbally are classified into the impulsive behavior category.

• **Social withdrawal.** Youngsters who either cannot or will not relate to other children and/or adults, stand up for their rights, or are fearful and timid with others are classified into the inhibited, or socially withdrawn behavioral category.

• **Lack of concern for others.** Youngsters who are unaware of, or unconcerned about the feelings of others in distress, either adults or other children are evaluated with regard to the degree of this deficit.

• **Disliked by peers.** Youngsters who are not sought out for play or other activities, nor are accepted when (and if) they seek others out are evaluated with regard to the degree of this deficit.

Our research has shown us that good problem-solvers, especially those with high alternative solution and consequential thinking scores at all ages studied, and means-ends scores in 9- to 12-year-olds (Shure & Spivack, 1972; Spivack & Shure, 1974; 1982) are better adjusted on all of the above behaviors than poor problem-solvers, and we believe it's because they experience less frustration. They are more likely to succeed because if their first option fails, they can turn to a different, more effective one. When they cannot have what they want, they can handle the frustration by thinking of other ways to deal with their feelings or satisfy their desires. Not only are such children less nagging and demanding on adults, but adults are less nagging and demanding on them. They do not need to be told what to do. They can think for themselves.

It is possible that children who are socially withdrawn experience failure so often they need to withdraw from other people and from problems they cannot solve. In any case, they have no need to think about what to do because other than watch—or play by themselves—they rarely do anything at all.

The Interventions

The early correlational research could only suggest an association between interpersonal cognitive problem-solving (ICPS) skills and behavior. To test our theoretical premise that the identified ICPS skills are an antecedent to behavior, we experimentally altered these skills through training, and then observed changes in the degree to which the child displayed specific aspects of impulsivity, inhibition, and/or prosocial behaviors in the classroom. Therefore, we focused on thinking skills rather than directly on behavior itself. With our belief that the earliest feasible age to start would be optimal, and with our early research showing that low-income urban youngsters were at greater risk behaviorally than their middle income age mates (Shure &

Spivack, 1970), our first intervention began with four-year-olds in federally funded day care.

Our training strategies grew out of what we learned from our correlational results, from what we observed children actually do and say, and from the theoretical position which served as a springboard to our research. To avoid stigmatizing any children by identifying only them for training, because children learn from each other, and because the teacher would apply the problem-solving techniques when conflicts would arise with all children (see "ICPS Dialoguing, below), the entire class was included in the training.

Because our conceptual framework proposed that the process, not the content, of thought helps children generalize their problem-solving skills to new situations, no one solution would be stressed. Given this, our focus was to help children develop the habit of generating different ways, not adult-valued good ways to satisfy their needs and cope with frustration. Encouraging children to think of their own solutions to problems and consequences of acts would, in our view, add to their understanding of what they do in interpersonal situations. If our theoretical position of problem-solving is correct, children's social adjustment and interpersonal competence would be guided more by how they think than by what they think.

Below is a brief description of the I Can Problem Solve interventions for use in schools, and for use by parents at home.

Trained by Teachers: preschool/primary grades: The format of daily 20-minute four-month training programs (Shure 1992a,b) are scripts with sequenced games and dialogues that teach three levels of language and thinking skills associated with the above-described behaviors prior to training.

The first level consists of games and dialogues that teach key word concepts that set the stage for later problem-solving thinking. These words include: is/is not, same/different, and before/after. Although children may already be familiar with these words, they are used in a special way with ICPS and

are introduced in game-like activities, applicable anywhere.

For example, at the juice table, the teacher can say, "Peter has a red shirt on. Who has the SAME (or DIFFERENT) color shirt as Peter?" The teacher can encourage children to look around the room, and say, "Roberta IS painting. Who is NOT painting?" "Who is doing the SAME (or DIFFERENT) thing as Roberta?" "Do we put our jackets on BEFORE or AFTER we go outside?"

These words are used in game form because when children learn to associate particular words with play, they are more likely to use them when it's time to settle disputes. Later, in a conflict situation, children can associate these words to help them think about "Do you two see what happened the SAME way or a DIFFERENT way?" "What happened BEFORE he hit you?" "What happened AFTER he hit you?" "Can you two think of a DIFFERENT way to solve this problem?" "Is your idea a good one or NOT a good one?" Children enjoy thinking about different ways to solve a problem when they associate the word different with fun.

Children also enjoy a game I call the "Two-Things-At-The-Same-Time" game. Children think of two things they can do at the same time, such as, "clap their hands and stomp their feet," then two things they can NOT do at the same time, such as "stand up and sit down." Applied to real-life problem situations, for example, when a child is talking to his or her neighbor during a math lesson, the teacher can ask, "Can you talk to your neighbor and listen to me at the SAME time?" Children associate that real-life application to the game, and often that is all that needs to be said. One child, Crystal, asked to go outside at an inconvenient time, and the teacher simply asked, "Can you be inside and outside at the SAME time?" In association with a game called "What-Can-You-Do-While-You-Wait," wherein children think of things to do while they wait in fictitious situations, they are also asked this question in real ones. While waiting to go outside, Crystal was asked, "Can you think of something DIFFERENT to do while you wait?"

The second level focuses on children's own and others' feelings, such as happy, sad, angry, proud, and frustrated. Building upon the earlier word concepts, children can talk about what makes them feel, for example, happy, and what does NOT. Children enjoy playing the memory game, where they hold up pictures (the number depends on the ability of the class) of animals, foods, etc., that make them feel HAPPY, then turn them around, and the class has to remember who is holding which picture. Children can also name things that make them feel sad, angry, etc., and the class remembers what they say. When a child is actually expressing a personal experience, then children are asked how they think that child is feeling, and also, to express their own feelings of happiness, sadness, etc.

In addition to understanding of and sensitivity to their own and others' feelings, the memory game helps children listen and pay attention to others' preferences—opening up more possibilities for the third level, alternative solution and consequential thinking. With puppets, pictures, story books, and role-playing techniques, children are asked to think of a solution to an interpersonal problem involving fictitious characters (e.g., Sally wants Robert to get off the slide so she can have a turn). Then, using the earlier word games they are asked, "Who can think of a different way?" Children offer as many ideas as they can. No value judgment is placed on the children's solutions because in later games, they are asked to think of as many different consequences as they can to a solution offered by the group—consequences that include what might happen next (e.g., things Robert might do or say), as well as how Robert and Sally might feel as a result of the solution carried out. (See Appendix A for a summary of concepts).

Application of the concepts taught in the formal lesson-games and used in fun ways in real life settings (e.g., at the juice table) help children associate how they think with what they do when real conflicts arise. Putting all of the previous exercises together, teachers and other school personnel (e.g., counsellors) are trained to talk with children using a problem-solving style of communication. Called "ICPS dialoguing," children are not told what and what not to do, and why. By asking instead of telling,

children learn to think about what they do, how it affects their own and others' feelings, other potential consequences, and what else they can do.

Below is an example of an actual ICPS dialogue with Cheryl, age four.

Teacher: Cheryl, what's happening here? That will help me understand the problem better (*elicits child's view of the problem*).

Cheryl: The clay is mine.

Teacher: What happened when you grabbed the clay? (*guides the child to consider the consequences of her actions*).

Cheryl: Vicki hit me.

Teacher: How did Vicki feel when you grabbed? (*elicits other's feelings*).

Cheryl: Mad.

Teacher: How did you feel when Vicki hit you? (*child thinks about own feelings*).

Cheryl: Mad.

Teacher: Grabbing is one thing you can do. Can you think of something DIFFERENT you can do so she won't hit you and you both won't be mad? (*guiding the child to think of a solution in light of consequences*).

Cheryl: (To Vicki) Can I have the clay?

Vicki: NO!

Teacher: Oh, you'll have to try again. Can you think of a DIFFERENT idea? (*encourages child not to give up too soon -- there is more than one way*).

Cheryl: (To Vicki) If you let me have the clay, I'll build you a castle.

(From Shure, M. B., 1992a, p. 352).

Happy with their own solution, the children felt pride instead of anger and frustration, and the teacher didn't have to solve the problem for them. What a different outcome than had the teacher intervened in one of many different ways I have heard over the years, ways that I have classified into three levels of talk, leading up to level 4, the problem-solving level.

Level 1 is power assertion, which includes threats, commands, punishments (e.g., if you two can't share the clay, I'll take it away and neither of you can have it), and time-out when used as a punishment rather than a genuine calming down period. Level 2, positive alternatives, tells children what to do, rather than what not to do, such as "Share the clay," or "Ask for it," instead of "Don't hit." Level 3 takes suggestions one step further to induction, or explanations and reasons, such as, "If you hit her, you might hurt her." Levels 2 and 3 are more positive than Level 1, but they are still doing the thinking for the child. By the time many children are four years old, they have heard the explanations and reasons many, many times and we are telling them what they already know. They tune out. To heighten the probability that the child is listening, Level 4, the problem-solving level asks with questions such as, "What might happen if you grab the clay?"—questions such as those in the dialogue above that engage the child in the process of thinking about and solving the problem.

In addition to thinking about how to negotiate for what they can have, children are also helped to cope with frustration when they cannot have what they want now. Instead of suggesting to a child who wants to go outside at an inconvenient time to "go paint," the teacher asks, "What can you do while you wait?" Again, the child is more likely to carry out his or her own idea. (For further examples of different levels of talk, see Appendix B).

Trained by teachers: elementary intermediate grades. Appropriate for grades four to six (Shure, 1992c), children discuss their own and others' feelings, causal connections, alternative solutions to problems and consequences to acts, as well as the

developmentally more sophisticated skill of means-ends thinking described earlier. The skill of means-ends thinking is taught by presenting a problem situation, and questions include: "What's the first thing the child character thinks about?" "Then what does she do?" (mean). "Is there anything that could block that step?" (obstacle). "What can she do to get around that obstacle?" "When is a good time to take that step?" "What about a not-good-time?" The idea here is to help children think of sequenced plans, anticipate their obstacles, and help reduce impulsive thought by appreciating the amount of time it will take to solve the problem, or the best time to act (see Appendix A).

As is true for the younger children, teachers learn to apply ICPS dialoguing which can include the same questions used for the younger children (e.g., "Can you think of a different way to solve this problem?") and the questions to help foster means-ends thinking (e.g., "What's the first thing you can do to solve this problem?" "Then what?" "What might get in the way?" "What can you do about that?" "How long do you think it will take?" "When is the best time to do that?").

Teachers in grades four to six find that substituting ICPS for language arts or social studies, that is, implementing the formal, didactic ICPS activities three times a week for 45 minutes is sufficient time to complete the program without sacrifice to the standard curriculum (ICPS has integration into language arts and social studies)—and supplemented by ICPS dialoguing when actual conflicts arise during the day.

Trained by parents: ages 4 to 7. The concepts taught are the same as those used in the school curricula (see Appendix A) for the younger age groups, except that they were applied to settings in the home (Shure & Spivack, 1978; Shure, 1994; 1996b,c,d). With pictures, puppets and actual objects in the home, games and activities teaching the same prerequisite word concepts as in the teacher-training are included, such as, "Color the picture of something that IS found in the kitchen" (e.g., corn on the cob). "Now color something that is NOT found in the kitchen" (e.g., a bed). "Show me pictures of two foods

that are the SAME. Now show me a food that is DIFFERENT from" (e.g., an apple). Pointing to a table, the child is asked, "How is this table the SAME as this chair?" (e.g., both are brown) and "How are they DIFFERENT?"

As in the teacher-training programs, children talk about the feelings of fictitious characters, including those in story books, and also about the feelings of themselves and others in the home. With pictures and puppets, children are asked to name alternative solutions and consequences to acts in the same way as those trained by their teachers.

ICPS dialoguing is applied with questions about real life situations such as, "Is playing with water in the living room (jumping on the furniture, running inside, drawing on the wall) a good idea or NOT a good idea?" "What might happen if you do that?" "How might I (you) feel if that happens?" "Can you think of a different place to play (jump, run, draw, etc.)?" Children who tease or otherwise torment their younger brothers or sisters would be asked, "Can you think of a DIFFERENT way to tell your brother what you want (how you feel)?"

Using the "Two-Things-At-The-Same-Time game, Belinda, age 4, was asked, when she interrupted her mother on the phone, "Can I talk on the phone and to you at the SAME time?" Before training, her mom would suggest she "go watch TV" (Level 2), to which Belinda would whine, "I don't want to watch TV, I want ..." When asked the new follow-up question, "What can you do while you wait?" (Level 4), Belinda got a book and started to "read." She thought of her own idea, and felt proud instead of angry. No whining, no nagging, no power play.

The parents met once a week for two hours over a ten-week period, and conducted the lesson-games as regularly as possible, for 15 to 30 minutes a day, at the same time of day as much as possible. The children came to recognize that after dinner, or before bedtime, etc., is "ICPS time," and enjoyed that consistency.

Research and Evaluation of ICPS Interventions

Our earlier research with low-income urban African-Americans, now supported by others in both low- and middle-income levels across ethnic groups (summarized in Denham & Almeida, 1987), was reported in detail in Shure, 1979, 1996a; Shure & Spivack, 1982; 1988; Spivack & Shure, 1974, 1982, 1985. The major findings are:

Trained by teachers. The trained ICPS skills that most improved at all age levels were solution and consequential thinking, and in 10-to 12-year-olds, means-ends thinking.

In one study (Shure & Spivack, 1982), low-income African-American four-year-olds attending federally funded day-care were studied over a two year period. In the nursery year, 113 children (47 boys, 66 girls) were trained, while 106 (50 boys, 56 girls) served as controls. In kindergarten, 69 trained youngsters were still available, 39 who would receive training both years (15 boys, 24 girls), and 30 (12 boys, 18 girls) who would receive no further training (to test for holding power). Of the 62 still-available controls, 35 (15 boys, 20 girls) were first trained in kindergarten, and 27 (12 boys, 15 girls) would constitute the never-trained controls. All four groups were initially comparable in age, sex distribution, Binet-IQ (range 70-147), and teacher-rated behavioral characteristics.

- Prior to preschool (in the fall), 36 percent of the children to be trained were rated as behaviorally adjusted (not impulsive or inhibited), and a similar percentage, 47 percent, of the controls. Following the intervention in the spring, 71 percent of the trained youngsters were rated adjusted, significantly greater than 54 percent of the nontrained controls.

- Of the 44 trained children rated as impulsive prior to the intervention and 39 controls, 50 percent of the trained became adjusted, significantly more than the 31 percent controls.

- Of the 28 trained children who were initially inhibited and 17 controls, 75 percent became adjusted, significantly greater than the 35 percent controls.

- With 35 children first trained in kindergarten rated as adjusted at pre-kindergarten, and 27 comparable controls, 83 percent of those trained were adjusted following training, significantly greater than the 30 percent controls. Of the 20 trained youngsters initially showing either impulsive or inhibited behaviors and 16 controls, 70 percent were rated as adjusted following the training, only 6 percent controls.

- At six months follow-up, 71 percent of the 80 still-remaining children adjusted at the end of preschool remained adjusted, compared to 42 percent of the 65 comparable controls, and one full year later, with 30 trained and 27 controls, 77 percent of the trained retained their adjusted behavior, significantly greater than the 30 percent controls.

- The behavior gains together with ICPS score gains being in the same children suggest that the behavior gains were associated with gains in the trained ICPS skills, and the gains were not explained by either initial IQ or IQ gains.

- Among ten-year-olds (Shure, 1993), ICPS gains of 112 low income African-American public school ICPS-trained boys and 110 girls were immediate as was true of the younger children, as were positive prosocial behavior gains. Although mean rating scale scores of high-risk behaviors did not significantly decrease in grade 5, they significantly increased among the 49 comparable boys and 48 girls who received a placebo intervention in impersonal cognitive skills. Following the second year of ICPS exposure, however, the negative high-risk behaviors of 47 two-year trained boys and 45 girls did decrease, significantly more than that of the 17 two-year placebo-intervention boys and 22 girls. Youngsters trained for one year in either ICPS (47 boys, 50 girls) or placebo interventions (30 boys, 23 girls) fell in between on the behavioral improvements.

Trained by parents. Our major study consisted of 40 African-American mothers and their four-year-olds who attended federally funded day-care, 20 to be trained and 20 as controls, with 10 boys and 10 girls in each group. To study the maximum impact of ICPS training by mothers on the behavior of their children, mothers of children displaying either impulsive or inhibited behaviors had priority.

- With trained youngsters gaining in ICPS skills more than controls, 71 percent of the 16 trained youngsters who were initially aberrant moved from an impulsive or inhibited behavioral classification to adjusted, compared to 31 percent of the 16 behaviorally comparable controls.

- Gains in ICPS skills were associated with gains in behavior, a finding similar to youngsters trained by their teacher.

- Mothers who improved in their own ICPS skills of alternative solution and means-ends thinking, and who applied ICPS dialoguing techniques with their children when real problems arose, had children who most improved in the trained ICPS skills and behaviors.

Trained by parents and/or teachers. A five-year longitudinal study (Shure, 1993) was the culmination of 20 years of research to test the ICPS/behavioral mediation hypothesis. In the fall of the kindergarten year (beginning of the study) 542 African-American public school youngsters with low income (264 boys, 278 girls) were studied, with 120 boys and 132 girls still available at the end of grade 4.

- Among the 200 boys and 180 girls still remaining at the end of first grade (first training assessment), youngsters trained by their teachers in kindergarten, in kindergarten and first grade, and by their teachers in kindergarten and by their mothers in first grade were, compared to controls, significantly ahead in ICPS skills, especially alternative solution skills. They also had significantly lower mean scores on rated negative behaviors, and significantly higher mean scores on rated positive behaviors—especially those trained two years by their teachers.

- In Grade 2, 162 boys and 162 girls still remained. Alternative solution thinking, superior in all three trained groups at the end of Grade 1 remained so at the end of Grade 2, with the two-year teacher-trained groups maintaining their superiority in both sexes. The mother-trained were the least impulsive, the least inhibited, and showed the fewest total behavior problems, with the same being true for the boys trained by teachers one or both years.

- In Grade 3, 142 boys and 148 girls remained. Solution and consequential thinking remained superior among trained groups, especially in boys, and it was the two-year teacher-trained boys who were the least impulsive and showed the fewest total behavior problems. Importantly, however, mother-trained boys and girls who most improved in behaviors were those whose mothers best learned to apply the ICPS dialoguing approach when actual problems arose at home.

- In grade 4, now three years after the final training, the 120 boys and 132 girls still remaining showed alternative solution skills remaining superior in the trained groups, especially in the two-year teacher-trained group. For all three behavior factors (impulsivity, inhibition, and total problem scores), the two-year trained group emerged dramatically superior in both boys and girls, with the significantly lower mean scores suggesting important sleeper effects. Again, in the mother-trained group, children whose mothers best applied problem-solving dialoguing (now measured three years earlier) were still maintaining their significant behavior gains at the end of grade 4, when the study was completed.

ICPS as service evaluations

ICPS has more recently been implemented and evaluated in three major school settings known to date. Aberson (1987), a school psychologist who trained kindergarten children from diverse ethnic and socio-economic backgrounds in Dade County, Florida, found both immediate ICPS and behavioral gains, lasting for a six-week follow-up period. Teachers reported that trained children from the Hispanic groups especially benefitted from the early

prerequisite word games as they helped them learn the English language—which may have contributed to their enhanced self confidence and ability to get along with others.

With single-subject design, Aberson (1996) has trained three sets of parents of second-grade children with Attention Deficit Hyperactivity Disorder (ADHD) and found significant behavior improvement at home and at school. Immediate and six-month follow-up showed significant decreased depression, decreased conduct problems and increased ability to relate well to others. While hyperactivity and inability to focus may have to be controlled with medication, Aberson's data suggests that executive functions can be improved through use of strategies of ICPS. While more research is needed, it is important that trained children with ADHD can learn how to handle anger, find alternative ways to express their anger, and recognize consequences of their behavior. Risk factors as hyperactivity, inability to focus and control anger, combined with a pattern of failure can, without training, contribute to an overall pattern of failure in school and also contribute to later delinquency and/or other serious problems.

The Mental Health Association in Illinois (MHAI), in cooperation with the Chicago Public Schools, expanded initial pilots to over 40 diverse regular, bilingual, and special education classes, representing seven schools, mostly kindergartens and first grades (Altman, 1989). In classrooms where teachers most judiciously implemented the lesson-games and applied the ICPS dialogues in real situations, children most improved in all measured indices of impulsivity, social withdrawal, and prosocial behaviors. The MHAI also conducted seven weeks of training parents of culturally diverse backgrounds. Children learned to express their feelings, think of alternative solutions to problems, and identify possible consequences. Parents reported a change in their own parenting style (use of ICPS dialoguing), and new insights into their children's thinking (Caravello, 1992).

In Memphis, Tennessee, Weddle & Williams (1993) found significant improvement in teacher-rated

classroom behaviors of ICPS-trained low-income first-graders compared to controls, and actually found more negative behaviors in control youngsters at the end of the school year than at the beginning. Qualitative analyses of middle- to upper-middle income parents are yielding the same reported improvements as those measured by systematic rating scales in children of lower income groups (Baumgardner, personal communication, March, 1996), suggesting the generic approach of ICPS is not limited to any one specific ethnic or income group.

Discussion

That youngsters who most improved in the trained ICPS skills were the same ones who also most improved in the measured behaviors supports our theoretical position that the identified ICPS skills function as significant behavioral mediators. Given this, we believe we have uncovered a new approach to reducing and preventing high risk behaviors in children—that is by teaching them how to think about what they do, including the impact on their behavior on their own and others' feelings. It is especially important to note that practitioners have also been able to successfully implement ICPS interventions in schools and for parents to use at home.

By learning to think the problem solving way, children learn how to engage in behaviors that Daniel Goleman (1995) calls Emotional Intelligence. They learn to "...persist in the face of frustration, to control impulse and delay gratification..., to keep distress from swamping the ability to think, to empathize, and to hope" (p. 34). And our research has shown, children can learn to think this way as early as age four.

As Goleman points out, one must be attuned to his or her own feelings to help make good decisions. The ICPS curricula for all age groups focuses upon helping children care about, and understand not only the feelings of others, but of their own as well, as exemplified by the earlier-described dialogue when the mother asked her child, "How did you feel when Vicki hit you?" The importance of this is further exemplified by a conversation I had with

Robert, age four. Robert got what he wanted by hitting others. When I asked him "What happened when you hit Paul?" Robert replied, "He hit me but I don't care." When he told me several times that he really didn't care, I realized that getting what he wanted (the truck) was more important than the consequence of getting hit back—perhaps even getting hurt.

Can children who don't care, or who endure their own pain when they are three, four, five years old possibly develop empathy for the victims they might hurt (physically or emotionally) later on? Not according to Deborah Prothrow-Stith (1997), who cited research suggesting that children who don't care what happens to them when they're little don't care what happens to others when they're big, and Goleman (1997) who, in his keynote address at the National Association of School Psychologists, informed us that one teenager he interviewed who killed another person said, "If I felt the pain of my victim, I couldn't have done what I did."

Did Robert not care about getting hit back because he was truly unconcerned about what happened to him? Or, did he really care, but because he lacked more prosocial strategies to obtain his wish, he pursued the only course of action he knew? Did he think about how hitting a child for a toy might make the other child feel? Or, was he so consumed with getting what he wanted that he didn't even think about feelings at all? Is it even possible that Robert was so used to getting hit by others that he became immune to that consequence? In light of the boy that Goleman interviewed, and Prothrow-Stith's reports, children who say, "I don't care," should make us take special pause.

In addition to helping children obtain their wish by thinking of solutions without negative consequences, ICPS also helps children cope with the frustration when they cannot have what they want. This is important because, as Goleman points out, an experiment by Mischel (in Goleman, 1995) showed that preschoolers who could resist the temptation to eat one marshmallow now and wait (a short amount of time) for two marshmallows later were, when

observed 12-14 years later, more socially competent and better able to cope with the frustrations of life. They were unlikely to give up even in the face of difficulties. The "grab-the-marshmallow preschoolers" displayed the very behaviors related to ICPS skills, in that they were more shy, easily upset by frustration, and likely to overreact to irritations with a sharp temper, thus provoking arguments and fights. And as teenagers, they were still unable to delay gratification. Interestingly, the delayers occupied themselves in various ways, including looking around the room, licking, but not eating the marshmallow, singing, tapping the table with their fingers. The "What-Can-You-Do-While-You-Wait" game and similar questions that have become part of the ICPS dialoguing directly address the importance of waiting and how to occupy oneself while doing that.

Although ICPS was not designed to directly improve school achievement, youngsters in both our research and the Weddle service evaluation found standardized test scores and/or math and reading grade book levels improved as well. It is logical to conclude that regardless of actual IQ level (never found to explain the ICPS/behavioral findings), once behaviors mediated through ICPS skills do improve, youngsters can better absorb the task-oriented demands of the classroom, and subsequently do better in school.

For mental health professionals working with children diagnosed with emotional disorders, the ICPS approach can be effective as well, in both outpatient (Yu, Harris, Solovitz, & Franklin (1986) and inpatient groups (Kazdin, Esveldt-Dawson, French, & Unis (1987)—suggesting that ICPS or adaptations of it can be used as a treatment approach as well as prevention.

In discussing ICPS as a process, not a content approach, Michael Chandler challenged whether one "good" solution would really suffice (in Shure, 1982). We believe that it is the process of turning to another that encourages one not to give up too soon. It may be that very flexibility that allows one to generalize a

style of thought from one problem situation to another. While in the short run it may be one "good" solution that solves a given problem, in the long run the issue for social adjustment is the ability to generate the kind of thinking that results in resiliency and pride instead of frustration and anger. And our research, now supported by others (e.g., Richard & Dodge, 1982), suggests that well-adjusted high ICPS children do, in fact, more often than not choose solutions that will have less negative consequences for them and for others. They have more solutions from which to choose.

Taking ICPS skills measured to date as a whole, perhaps the consummate problem-solver first identifies the problem, and recognizes what caused it by looking back to what led up to it. He or she then thinks of solutions or plans, taking the perspectives of others into account. These plans include anticipation of potential consequences of an act, and flexibility to change his or her solution or plan, if need be.

The competence-building nature of ICPS is similar to, yet different from the conflict resolution programs found in many schools nationwide. ICPS does help children learn to resolve conflicts, but differs from some programs in that:

1. It starts as early as preschool;
2. It teaches skills prerequisite to problem-solving including a problem-solving vocabulary;
3. ICPS focuses on teaching skills to prevent conflicts, not just crisis management;
4. It empowers the entire class with problem-solving skills, unlike some programs that engage child mediators;
5. It deals with conflicts, but it also deals with mental health issues (e.g., coping with frustration, learning how to wait);
6. It helps aggressive children, but it also helps withdrawn children learn to express themselves and stand up for their rights;
7. It deals with adult-child problems (e.g., not paying attention) as well as peer problems).

I have been told that by teaching specific prerequisite skills, and by helping children develop a style of problem-solving thinking, ICPS helps to prepare young children for the conflict resolution programs they will be exposed to when they reach third, fourth, or fifth grade.

The competence-building nature of ICPS meets the guidelines of CASSP principles in light of its strengths-based focus. As Dr. Gordon R. Hodas notes in his CASSP discussion paper (1996):

"The essence of strengths-based treatment is a presumption of competence and positive intentions on the part of participants, together with a commitment to collaborate as a team in building on assets, addressing needs and providing individualized responses. Strengths-based treatment enables the child and family to participate actively, be listened to, and be understood. In strengths-based treatment, problems and needs are acknowledged but are seen as temporary barriers to development, subject to change through mutual respect and creative problem solving." (p. 4).

For ICPS, the strengths-based treatment (and prevention) team can consist of teachers, school psychologists, counsellors, social workers, or mental health professionals who, if on-site at the school or agency where ICPS is being conducted, can work together to provide consistency in communication style throughout the school or agency. Members of the student support staff can, for example, aid the classroom teacher when needed, serve as troubleshooters, and help to train new teachers as they arrive.

While it is more difficult to know whether parents continue to use the ICPS approach once the training project is over, my own informal interviews with those who best learned how to dialogue with their children were more likely to continue using the approach than those who did not. Not only did those parents implement the program more effectively, but perhaps their child's improved behavior motivated them to continue. How to keep more parents motivated to continue the program after the research or service project is over remains a challenge. We do believe that if children can learn to think about the problems important to them early in life, then in junior high, high school and beyond, when the subject of drugs, violent behavior, unsafe sex and other problems we are all concerned about today come up, they will be able to think about those things too.

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Appendix A

ICPS Lesson Components

A problem-solving vocabulary (ICPS word pairs):

- Is/is not (e.g., “Is your idea a good one or not a good one?”)
- Same/different (e.g., “Can you think of a different way to solve this problem?”)
- Why/because (e.g., “Why do you think he hit you? Because...”)
- Before/after (e.g., “Did he hit you before you hit him or after?”)

Additional word pairs:

- And/or (e.g., “I can do this or that. I can do this and that.”)
- Might/maybe (e.g., “What might happen next if...?”)
- If/then (e.g., If I do this then that might happen.”)
- Now/later (e.g., “I can’t play with this toy now; I can play with it later.”)

Pre-problem-solving thinking skills:

- Listening/paying attention
- Considering own and others’ feelings or views
- Avoiding faulty conclusions

Problem-solving thinking skills:

- Sensitivity to problems as interpersonal
- Cause and effect
- Solutions (different ideas)
- Consequences (different things that might happen)
- Dynamic orientation (understanding motives)—ages 9+
- Means-end thinking (sequential planning)—ages 9+

Behavioral outcome (reduce or prevent abnormal amounts of):

- Physical and verbal aggression
- Inability to cope with frustration
- Inability to delay gratification
- Social withdrawal
- Lack of concern for others
- Being disliked by peers

Appendix B

Four Levels of Communication Style

I have divided the way we talk to children into four levels. These levels help the trainer clarify for the teacher, parent, or other caregiver the difference between the problem solving style of talk (ICPS dialoguing) and telling and explaining why the child should and should not do things. Trainees enjoy thinking of examples of what they would do or say and then deciding which level of communication they are using.

I. Power Assertion (demands, belittles, punishes)

Do it because I say so!
Do you want a spanking!
How many times have I told you ...!
If you can't share the truck, I'll take it away and neither of you can have it.

II. Positive Alternative (no explanation)

I'm on the phone now, go watch TV.
Ask him for the truck.
Children must learn to share.

III. Induction (explanations and reasons)

I feel angry when you interrupt me.
If you hit, you'll lose a friend (get hurt).
You'll make him feel angry if you hit him (grab toys).
You shouldn't hit (grab). It's not nice.

IV. The Problem Solving Process: ICPS Dialoguing

What's the problem? What's the matter?
How do you think I (s/he) feel(s) when you hit (grab)?
What happened (might happen) when you did (do) that?
Can you think of a different way to solve this problem (tell him/her/me how you feel)?
Do you think that is or is not a good idea.?

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