I CAN PROBLEM SOLVE (INTERPERSONAL COGNITIVE PROBLEM SOLVING)

I Can Problem Solve (ICPS) is a universal school-based program that focuses on enhancing the interpersonal cognitive processes and problem-solving skills of children ages 4-12. ICPS is based on the idea that there is a set of these skills that shape how children (as well as adults) behave in interpersonal situations, influencing how they conceptualize their conflicts with others, whether they can think of a variety of solutions to these problems, and whether they can predict the consequences of their own actions.

Program Description

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<th>Target Population</th>
<th>Elementary</th>
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<tr>
<td>Distributor</td>
<td>Research Press</td>
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<tr>
<td>Goals/Mission/Target outcomes</td>
<td>Violence prevention and character education through problem-solving</td>
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<td>Delivery Agents</td>
<td>Classroom teachers</td>
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| Intervention Strategies | • Pre-Problem solving section that emphasizes vocabulary, learning to identify feelings and considering other points of view.  
• Problem Solving Skills section that focuses on creating solutions to problems, considering consequences and deciding how to choose solutions.  
• Students learn skills through formal lessons (games, stories, puppets, role playing), through everyday interaction in the classroom and through integration in the school curriculum.  
• Parenting workshops  
• Professional development |
| Developer               | Dr. Myrna B. Shure |
| Initial Mission         | The program was originally designed for use in nursery school and kindergarten. |
| Changes in mission      | Now for use through Grade 6. |
| Material purchases      | Games, exercises |
| Staff development       | One-or two-day on-site training. One-day follow-up is suggested. |
| Duration                | 10-12 weeks (59-83 lessons per year) |
Research


Study 1.

<table>
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<th>Sample</th>
<th>Comparison</th>
<th>Longitudinal</th>
<th>Statistical</th>
<th>Publication</th>
<th>Implementation</th>
<th>Scientific Quality</th>
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<td>size</td>
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<td>Change</td>
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<td>Assessment</td>
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<td>Pretest/posttest</td>
<td>design with delayed posttest</td>
<td>Statistical tests and significance reported</td>
<td>Peer reviewed</td>
<td>Implementation assessed</td>
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Research Questions

- What were the impacts of the program one year after intervention on students who only participated in the program during nursery school but not in kindergarten and were the impacts sustained?
- What were the impacts of the program on students who received training in kindergarten but not in nursery school?
- Is two years of training better than one?

Methods

- 131 nursery school and kindergarten inner-city students participated in the study:
  - 39 students participated in the program in both nursery school and kindergarten (two-year trained).
  - 30 students participated in the program in nursery school but not in kindergarten where they acted as controls (trained-nursery only).
  - 35 students did not participate in the program in nursery school and acted as controls but did participate in kindergarten (trained-kindergarten only).
  - 27 students did not participate in the program during either year and served as controls both years (never-trained).
- Program lasted three months each year. Data collected immediately prior to intervention and immediately after intervention each year.
- Measures included the following:
  - Alternative solutions measured by the Preschool Interpersonal Problem Solving Tests: Student’s score based on the number of different solutions he/she proposed to the following two scenarios:
    - Ways the student might obtain a toy another child has
    - Ways the student might avert mother’s anger caused by the student damaging something valuable.
  - Consequential thinking measured by the What Happens Next Game: Student’s score based on the number of different consequences he/she described for the following scenarios:
    - Grabbing a toy from another child
    - Taking something from an adult without asking
  - Behavioral adjustment measured by the Hahnemann Preschool Behavior Rating Scale (teacher...
### Study 1

#### Result

- The impacts of the program one year after intervention on students who only participated in the program during nursery school but not in kindergarten:
  - **Alternative solutions:**
    - Nursery-only trained students showed significant gains compared to never-trained students.
    - Initial gains not significantly sustained by nursery-trained students at one-year follow-up (at the end of kindergarten) compared to controls.
  - **Consequential thinking:**
    - Nursery-only trained students showed significant gains compared to never-trained students.
    - Initial gains were sustained by nursery-trained students at one-year follow-up (at the end of kindergarten) compared to controls.
  - **Behavioral Adjustment:**
    - Nursery-only trained students showed significant gains compared to never-trained students.
    - Initial gains were sustained by nursery-trained students at one-year follow-up (at the end of kindergarten) compared to controls.

- The impacts of the program on students trained for the first time in kindergarten:
  - **Alternative solutions:**
    - Kindergarten-trained students showed significant gains compared to control students.
  - **Consequential thinking**
    - Kindergarten-trained students showed significant gains compared to control students.
  - **Behavioral Adjustment**
    - Kindergarten-trained students showed significant gains compared to control students.

- **Amount and timing of training:**
  - **Alternative solutions:**
    - Two-year trained students showed significantly greater gains compared to nursery-school trained, kindergarten-trained and control students.
    - There was no significant difference found between nursery-school trained and kindergarten-trained students.
  - **Consequential Thinking:**
    - Two-year trained students showed significantly greater gains compared to nursery-trained students and controls students but not compared to kindergarten-trained students.
    - There was no significant difference found between nursery-school trained and kindergarten-trained students.
  - **Behavioral adjustment**
    - Two-year, nursery-school and kindergarten trained students showed significant gains compared to never-trained students.
    - No significant differences among the trained groups.

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### Study 2

<table>
<thead>
<tr>
<th>Sample size</th>
<th>Comparison group</th>
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### Research Questions

- What was the impact of the program on nursery-school and kindergarten students in terms of interpersonal cognitive problem solving skills and behavioral adjustment?
- Do interpersonal cognitive problem solving skills directly mediate behavioral change?
- Was there any significant correlation between IQ level and program impact?

### Methods

- During the first year of the two-year study, 113 nursery school students participated in the program (nursery-trained) and 106 did not (nursery-controls).
- During the second year of the study, 35 of the 106 nursery-controls participated in the program during kindergarten (kindergarten-trained) with controls consisting of 27 students from the same pool of 106 nursery-controls.
- Program lasted three months each year. Data collected immediately prior to intervention and immediately after intervention each year.
- To measure the impact of the program on nursery-school and kindergarten students in terms of interpersonal cognitive problem solving skills and behavioral adjustment, the following were used:
  - Interpersonal Cognitive Problem Solving Skills (ICPS)
    - Alternative solution thinking measured by the Preschool Interpersonal Problem Solving Tests: Student’s score based on the number of different solutions he/she proposed to the following two scenarios:
      - Ways the student might obtain a toy another child has
      - Ways the student might avert mother’s anger caused by the student damaging something valuable.
    - Consequential thinking measured by the What Happens Next Game: Student’s score based on the number of different consequences he/she described for the following scenarios:
      - Grabbing a toy from another child
      - Taking something from an adult without asking
    - Causal Test: The students’ ability to conceptualize cause-and-effect when presented with a stated outcome.
  - Behavioral adjustment measured by the Hahnemann Preschool Behavior Rating Scale (teacher rated):
    - Impatience
    - Emotionality
    - Dominance-Aggression
- To measure whether ICPS skills directly mediated behavioral change, the following was examined:
  - For students whose pre-training behaviors were judged to be maladaptive, and post-training
behaviors were within the adjusted range, the change in program skills was compared with the ICPS change in students whose initial maladaptive behaviors did not improve.

Results

- The impact of the program on nursery-school and kindergarten students in terms of ICPS skills and behavioral adjustment:
  - Interpersonal Cognitive Problem Solving Skills
    - Alternative solution thinking
      - Both nursery-trained and kindergarten-trained students showed significant gains compared to controls.
    - Consequential thinking:
      - Both nursery-trained and kindergarten-trained students showed significant gains compared to controls.
    - Causal thinking:
      - Nursery-trained students showed significant gains compared to controls, but the small sample size of kindergarten-trained students “did not allow a similar magnitude of causal increase to produce a significant training effect.”
  - Behavior adjustment
    - Both nursery-trained and kindergarten-trained students showed significant gains compared to controls.

- How ICPS skills mediate behavioral change:
  - In both years of the study, those students who improved in behavior adjustment were significantly more likely to also improve in solution thinking skills and consequential thinking than those whose behavior did not change.
  - No significant link found between causal thinking and behavior.

- Correlation between ICPS skills and IQ:
  - No significant findings; therefore, gain not due to IQ alone.

Study 3.


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**Research Questions**

- **Immediate Impact:** What are the immediate (three-month) impacts of the program on the problem-solving skills and behaviors of low-income minority children who were categorized as impulsive, inhibited or adjusted?
- **Mediating Linkages:** Can behavior gains made by “aberrant” students be attributed to problem-solving skills taught by the program?
- **Holding Power:** How long do positive impacts of the program last?
- **Amount and Timing of Training:** Would training for two years be more beneficial than training for one year?
- **Prevention Impact:** Would the program’s positive impacts on behavior hold six months and one year after students received the program?

**Methods**

- **In the first year of the study, the following participated:**
  - 113 inner city students participated in the program in nursery school (nursery-trained) and 106 students did not and acted as controls (nursery controls).
  - 10 training teachers and 10 control teachers

- **In the second year of the study the following participated:**
  - 39 of the nursery-trained students participated in the program for a second year in kindergarten (TT for trained nursery-trained kindergarten)
  - 30 of the nursery-trained students did not participate for a second year and acted as controls in kindergarten (TC for trained nursery-control kindergarten)
  - 35 of the nursery controls participated in the program for the first time in kindergarten (CT for control nursery-trained kindergarten)
  - 27 of the nursery controls received no training in kindergarten (CC for control nursery-control kindergarten)
  - 11 training teachers and 10 control teachers

- **Data was collected before and after the program was administered in both nursery school and kindergarten.**
- **The following was measured:**
  - **Alternative solutions thinking measured by the Preschool Interpersonal Problem Solving Tests:** Student’s score based on the number of different solutions he/she proposed to the following two scenarios:
    - Ways the student might obtain a toy another child has
    - Ways the student might avert mother’s anger caused by the student damaging something valuable.
  - **Consequential thinking measured by the What Happens Next Game:** Student’s score based on the number of different consequences he/she described for the following scenarios:
    - Grabbing a toy from another child
    - Taking something from an adult without asking
  - **Behavioral adjustment measured by the Hahnemann Preschool Behavior Rating Scale (teacher rated):**
    - Impatience
    - Emotionality
    - Dominance-Aggression
    - After scoring, students were grouped as one of the following “adjustment-types:”
      - Inhibited
      - Impulsive
• Adjusted

Result
• Immediate Impact
  o Alternative solutions thinking
    ▪ All three adjustment types (inhibited, impulsive and adjusted) in all trained groups (TT, TC and CT) in both nursery school and kindergarten showed significant gains compared to controls.
  o Consequential thinking:
    ▪ All three adjustment types (inhibited, impulsive and adjusted) in all trained groups (TT, TC and CT) in both nursery school and kindergarten showed significant gains compared to controls.
  o Behavior
    ▪ Nursery school
      • 36% (41 of 113) of the incoming students to be trained and 47% (50 of 106) of the incoming controls were rated as “adjusted.” By three-month post-test, 71% (80 of 113) of the trained students and 54% (57 of 106) of the controls were rated as “adjusted” – a significant gain for trained students.
      • 50% (22 of 44) of trained students and 21% (8 of 39) of controls who were initially rated at pre-test as “impulsive” were rated as “adjusted” at post-test – a significant gain for trained students.
      • 75% (21 of 28) of trained students and 35% (6 of 17) of controls who were rated as “inhibited” at pre-test were rated as “adjusted” at post-test – a significant gain for trained students.
    ▪ Kindergarten
      • 43% (15 of 34) of incoming CTs and 41% (11 of 27) of CCs were rated as “adjusted” at pre-test. By three-month post-test, 83% (29 of 35) of CTs and 30% (8 of 27) of CCs were rated as “adjusted” – a significant gain for trained students.
      • 70% (14 of 20) of the “initially aberrant” CTs became “adjusted” by post-test while only one of the CCs did the same.
  • Mediating Linkages:
    o Program gains were compared for trained students who moved from “aberrant” behavior to “adjusted” with trained students who remained “aberrant.”
      ▪ Nursery and kindergarten
        • Students with stronger behavioral gains also showed significant gains in both alternative solutions thinking and consequential thinking compared to students with no behavioral gains.
  • Holding Power of nursery training
    o The six-month post-test examined all nursery-trained students before some of them went on to their second year of training in kindergarten and all nursery controls before some of them went into their first year of training in kindergarten. The one-year post-test examined TCs and CCs.
      ▪ No significant Group by Time findings at six-month or one-year follow-ups for alternative solutions thinking or consequential thinking. “One group did not change more than the other; trained children, ahead of controls at postnursery, remained ahead at both follow-up periods.” The only exception was the following:
        • At six-month follow-up, control students showed significantly stronger gains that program students for alternative solutions thinking.
        • At six-month follow-up, 71% (57 of 80) of program students were rated as “adjusted” compared to 42% (27 of 65) of control students.
  • Amount and Timing of Training:
    o Alternative solutions, consequential thinking and adjusted behavior:
Students who received two years of the program (TTs) showed significant gains compared to students who only received one year.

Students who received one year of the program showed significant gains compared to students who received no training.

- Prevention Impact
  - 86% (25 of 29) of the trained students who were rated “adjusted” at pre-test maintained their rating up until the six-month follow-up test compared to 58% (18 of 13) of never-trained controls. At the one-year follow-up, 8 of 9 TCs remained “adjusted” compared to 4 of 10 CCs.
  - 27% (14 of 51) of the trained students rated as “aberrant” at pre-test remained “aberrant” at six-month follow-up compared to 65% (22 of 34) of never-trained controls. At one-year follow-up, 2 of 21 TCs remained “aberrant” compared to 12 of 17 CCs.

Study 4.

<table>
<thead>
<tr>
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<td>Pretest/posttest design with delayed posttest</td>
<td>Significance reported but statistical test not identified</td>
<td>Unpublished with little methodological reporting</td>
<td>Implementation unconfirmed</td>
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Research Questions

- What are the program’s impacts on older students in the 5th and 6th grades?

Methods:

- 97 students were trained in the program (ICPS) in the 5th grade and 53 students were trained in a comparison impersonal critical thinking program (CT).
  - ICPS focused on perspective taking, recognizing other people’s motivations for behavior, sensitivity to the existence of a problem as interpersonal and its causes and listening and awareness skills.
  - CT focused on reasoning skills, deductive logic, generating impersonal alternative thinking and generating means-end plans.
- The following year, in 6th grade, 92 of the original 97 ICPS students and 39 of the original 53 CT students received a second year of training.
- Pre-test administered in the fall before program implementation in the 5th grade. First post-test administered at the end of 5th grade and second post-test administered at the end of sixth grade.
- Measured were the following (not detailed in paper):
  - Alternative Solution Skills
Consequential Thinking Skills

- Peer ratings for behavior (impulsivity and shyness)

### Results:
- ICPS students showed significant gains compared to CT students in all three measures at the end of 5th grade.
- ICPS students showed significant gains and significant decreases in shyness compared to controls in Alternative Solution Skills and Consequential Thinking Skills at the end of 6th grade.
- ICPS girls (both one-and two-year trained) showed significant decreases in impulsivity compared to controls at the end of 6th grade, but no significant findings for ICPS boys.

### Additional Information

#### Awards and Recognition

- National mental health Association: Lela Rowland Prevention Award, 1982
- American Psychological Association
  - Distinguished Contribution Award, Division of Community Psychology, 1984
  - Model Prevention Program, Task Force on Promotion, Prevention and Intervention Alternatives in Psychology, 1986
  - Model Prevention Program, Task Force on Model Programs, Division of Clinical Psychology, Section, Child Psychology, and the Division of Child, Youth and Family Services, 1993
- Center for the Study of Prevention of Violence, University of Colorado: BluePrints for Violence Prevention, Promising Program, 1999
- New Jersey Department of Education: Character Education Program of Merit, 2000
- American Federation of Teachers: Recognized as an effective research-based discipline and violence prevention program, 2000
- Center for Substance Abuse Prevention: Prevention Science Decision Support System, Promising Program, 2001

#### Contact Information

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