ABSTRACT

Designed to reach a varied audience, this catalog provides concise summaries of some of the major commercial programs that teach thinking, and furnishes descriptions in terms of major goal, target audience, assumptions, process/materials, time, and developer. The first section offers programs primarily intended for teachers, including the California Writing Project, cognitive levels matching, critical thinking, and tactics for thinking. The next section supplies summaries of available materials for students at various levels, including building thinking skills, future problem solving, Great Books, philosophy for children, and strategic reasoning. The final section furnishes material for specific age groups—elementary, middle school, and secondary students. Programs for elementary age groups include higher-thinking skills, reading and thinking strategies, and vocabulary learning strategies. Two middle school programs are summarized—Odyssey, and Thinking Posters. The secondary program summaries include creative problem solving, critical analysis and thinking skills, and problem solving and comprehension. Publisher and/or developer addresses are given for each program, as well as a cost estimate for the materials mentioned. (MM)
A Catalog of Programs for Teaching Thinking

Janice Kruse and Barbara Z. Presseisen
A Catalog of Programs for Teaching Thinking
Janice Kruse and Barbara Z. Presseisen
# TABLE OF CONTENTS

**Programs primarily for teachers:**

<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Student’s Thinking Skills</td>
<td>1</td>
</tr>
<tr>
<td>The California Writing Project</td>
<td>3</td>
</tr>
<tr>
<td>Cognitive Levels Matching</td>
<td>4</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>5</td>
</tr>
<tr>
<td>Structure of Intellect</td>
<td>6</td>
</tr>
<tr>
<td>Tactics for Thinking</td>
<td>8</td>
</tr>
</tbody>
</table>

**Programs for students (Multi-levels):**

<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Thinking Skills</td>
<td>9</td>
</tr>
<tr>
<td>Future Problem Solving</td>
<td>10</td>
</tr>
<tr>
<td>Great Books</td>
<td>12</td>
</tr>
<tr>
<td>Insights</td>
<td>13</td>
</tr>
<tr>
<td>Instrumental Enrichment</td>
<td>14</td>
</tr>
<tr>
<td>Muscles of the Mind</td>
<td>15</td>
</tr>
<tr>
<td>Philosophy for Children</td>
<td>17</td>
</tr>
<tr>
<td>Strategic Reasoning</td>
<td>19</td>
</tr>
</tbody>
</table>

**Programs for specific age groups:**

**Elementary**

<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher-Order Thinking Skills</td>
<td>21</td>
</tr>
<tr>
<td>Just Think</td>
<td>22</td>
</tr>
<tr>
<td>Reading and Thinking Strategies</td>
<td>23</td>
</tr>
<tr>
<td>SAGE</td>
<td>24</td>
</tr>
<tr>
<td>Vocabulary Learning Strategies</td>
<td>25</td>
</tr>
<tr>
<td>Writing and Thinking - A Process Approach</td>
<td>26</td>
</tr>
</tbody>
</table>

**Middle School**

<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odyssey</td>
<td>27</td>
</tr>
<tr>
<td>Thinker Posters: Keys to Critical Thinking</td>
<td>28</td>
</tr>
</tbody>
</table>

**Secondary**

<table>
<thead>
<tr>
<th>Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CoRT</td>
<td>29</td>
</tr>
<tr>
<td>Creative Problem Solving</td>
<td>30</td>
</tr>
<tr>
<td>Critical Analysis and Thinking Skills</td>
<td>31</td>
</tr>
<tr>
<td>Intelligence Applied</td>
<td>32</td>
</tr>
<tr>
<td>Learning to Learn</td>
<td>33</td>
</tr>
<tr>
<td>Project Impact</td>
<td>35</td>
</tr>
<tr>
<td>Problem Solving and Comprehension</td>
<td>37</td>
</tr>
</tbody>
</table>
INTRODUCTION

Educators considering the selection of thinking skills materials are often confused by the vast array of alternative published programs. To make matters worse, these programs are often described in a confusing way using unparallel descriptors. The purpose of this catalog is to provide concise summaries of some of the major commercial published programs that teach thinking. Each of these programs is described in terms of its major goal, intended audience, assumptions, process/materials, time and developer. These descriptions should be useful in finding the appropriate material suitable for your school needs and student population. The addresses provided at the end of each description will be of use to school personnel to obtain further information regarding the available programs.
BUILDING STUDENT'S THINKING SKILLS

GOAL
To help schools build a solid foundation for increasing such attributes as student motivation, school-wide discipline, and students' self-concepts.

INTENDED AUDIENCE
Teachers, administrators and parents.

ASSUMPTIONS
Inservice workshops are the most effective way to implement a thinking skills effort.

SKILLS
Creativity, teaching and learning styles, and verbal/thinking skills.

PROCESS/MATERIALS
Workshops involve teachers, administrators, support staff and parents in planning an integrated, multilevel and multidisciplinary approach to increasing students' thinking skills. Workshops are self-contained and require no outside experts. A detailed Guide and Plan gives complete directions for leading these nine specific workshops:

1. Critical Thinking
2. Questioning Methods to Improve Thinking Skills
3. Creativity in the Classroom
4. Promoting Active Learning
5. Decision Making Skills
6. Thinking Skills Instruction in the content areas
7. Thinking Skills Instruction by Culturally Different Students
8. Classroom Management

Each workshop consists of an introductory activity, suggested activities for exploration, and a discussion. Workshops require the following printed and filmstrip materials:

Print ($2.50 per book)

1. Cooperative Learning: Student Teams by Robert E. Slavin
2. Creativity in the Classroom by E. Paul Torrance
3. Critical Thinking Skills by Marcia Heiman and Joshua Slomianko
4. Decision Making Skills for Middle School Students by Sherrel Bergmann and Gerald J. Rudman
5. Educational Games and Simulations, Revised Edition, by Wm. Ray Heitzman
6. Language Skills in the Classroom by Pamela Cooper and Lea Stewart
9. Measuring Thinking Skills in the Classroom by Richard J. Stiggins, Evelyn Rubel, and Edys Quellmalz
10. Perspectives on Effective Teaching and the Cooperative Classroom, edited by Judy Reinhartz
12. Student-Centered Teaching for Increased Participation by James Kelly
15. Thinking Skills Instruction in English/Language Arts by Beau Fly Jones, Lawrence B. Friedman, Margaret Tinzmann, Beverly J. Walker
16. Thinking Skills Instruction in Mathematics by Jack Lochhead, Ronald Narode, Marcia Heiman, Joshua Slomianko
17. Thinking Skills Instruction in Science by Jack Lochhead, Ronald Narode, Marcia Heiman, Joshua Slomianko
18. Thinking Skills Instruction in Social Studies by Karen Rosenblum-Cale
19. Thinking Skills: Research and Practice by Barbara Z. Presseisen
20. Unfinished Stories for Developing Students' Thinking Skills, edited by Elizabeth Hirzler Weiner

Filmstrip ($32.50)

21. Applying Student Thinking Skills
22. Identifying Student Thinking Skills
23. Evaluating Student Thinking Skills
24. Questioning Techniques, for Teachers and Students

TIME
Inservice time; can vary

DEVELOPERS
Marcia Heiman
Joshua Slomianko

AVAILABLE FROM
Available after May 1987 from NEA Professional Library P.O. Box 509 West Haven, CT 06516

OR
1201 16th Street, NW Washington, D.C. 20036-3290 (202) 822-7200
THE CALIFORNIA WRITING PROJECT

GOAL
To enable teachers to foster students' critical thinking skills through writing.

INTENDED AUDIENCE
Teachers of primary through college level students.

ASSUMPTIONS
Since writing is a complex, critical thinking activity, teaching thinking will enable students to become better writers and vice versa.

SKILLS
Teachers are given instruction on how to develop lessons to relate the affective domains of writing (sensory/descriptive, imaginative/narrative, practical/informative, and analytical/expository) to the thinking/writing process.

PROCESS/MATERIALS
The teacher/consultants from the project have created a 300 page notebook, Thinking/Writing: Fostering Critical Thinking Skills Through Writing. This contains thirty demonstration lessons (one for each primary, elementary, intermediate, high school, and college teachers/students for each level of Bloom's taxonomy) that provide explicit strategies for teaching each stage of the composing process - prewriting, precomposing, writing, sharing, revisions, editing, and evaluation. The notebook also contains an explanation of how to create thinking/writing lessons. To obtain a complete sample lesson, write to Henia Alony and specify the grade level and the thinking level you are interested in.

TIME
Variable.

DEVELOPER
The project is directed by Carol Booth Olson.

AVAILABLE FROM
Carol Booth Olson
UCI Writing Project
Office of Teacher Education
University of California at Irvine
Irvine, CA 92717
(714) 856-5011
COGNITIVE LEVELS MATCHING

GOAL
To facilitate cognitive development in students through appropriate educational intervention.

INTENDED AUDIENCE
Teachers and administrators of nursery through senior high schools.

ASSUMPTIONS
Adult logic cannot be imposed on children's learning. Teachers need to take a developmental perspective when teaching children.

SKILLS
Educators learn to apply principles from Piaget's constructivist theory of learning to the evolving processes of curriculum development and adaptation.

PROCESS/MATERIALS
The in-service courses have been structured into three tiers. The first level concentrates on Piagetian theory. Level two is a follow-up of the first. Level three is an advanced level course offered to encourage teachers to explore the cognitive demands of specific curriculum areas while systematically evaluating their own teaching performances. In addition to conducting the courses, project consultants spend time in classrooms, working with teachers. The project has neither a prepackaged, fixed curriculum nor specific curriculum materials. Cost for 6 day seminar at South Hampton College, University of Long Island $540. Room and board brings costs to $715.00. Graduate credits are available at additional cost.

TIME
Given as a six day summer institute at Southampton College, Long Island University.

DEVELOPER
Dr. Martin Brooks

AVAILABLE FROM
Dr. Martin Brooks
The Institute of Cognitive Levels Matching
c/o Shoreham-Wading River Central School District
Shoreham, NY 11786
(516) 929-8500
GOAL
To assist teachers in their efforts to develop and integrate critical thinking skills in their classrooms.

INTENDED AUDIENCE
Teachers (K-12)

ASSUMPTIONS
Students are not prepared to meet the demands of an increasingly complex and rapidly changing world without critical thinking skills.

SKILLS
Methods of logical inquiry and reasoning. How to incorporate these into classroom instruction.

PROCESS/MATERIALS
The AFT is developing materials and support services to assist teachers in their efforts to develop and integrate Critical Thinking Skills in their classrooms. The Critical Thinking Project features:

- a series of five booklets highlighting the issues relating to teaching critical thinking
- a special "Inside Your School" TV feature devoted to critical thinking skills
- a series of videotapes with accompanying teacher guides for staff development on critical thinking instruction in the K-12 curriculum.

Most of the above materials are still under development. The first booklet, The Goal of Critical Thinking: from Educational Ideal to Educational Reality by Debbie Walsh and Pichard W. Paul is available for $18.00.

TIME
Variable

DEVELOPERS
AFT (Debbie Walsh)

AVAILABLE FROM
AFT Education Issues Department
555 New Jersey Avenue, NW
Washington, DC 20001
(302) 879-4420
GOAL
To equip students with the necessary intellectual skills to learn subject matter content and to think critically.

INTENDED AUDIENCE
All students and adults. Can start as early as first grade. Staff training and retraining needed for implementation.

ASSUMPTIONS
Intelligence consists of 120 thinking abilities that are combination of such processes as comprehending, remembering, and analyzing; Contents such as words, forms or symbols; and products which are in single units, groups or relationships.

Individual differences in these abilities can be assessed with SOI tests and improved with SOI materials. (Educators are given at least a two day seminar in which they are shown how intelligence can be taught and learned).

SKILLS

<table>
<thead>
<tr>
<th>Language Arts/Reading</th>
<th>Basic</th>
<th>Enrichment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concept formation</td>
<td>Memory for implied meanings</td>
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<tr>
<td></td>
<td>Differentiating concepts</td>
<td>Judging verbal implications</td>
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<tr>
<td></td>
<td>Comprehending verbal relations</td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td>Comprehending verbal systems</td>
<td>Interpreting verbal meanings</td>
</tr>
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<td></td>
<td></td>
<td>Using analogical ideas</td>
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<td></td>
<td></td>
<td>Creative writing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Creative interpretation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Creative grammatics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arithmetic, Mathematics, Science Preparation</th>
<th>Basic</th>
<th>Enrichment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comprehending space</td>
<td>Discriminating notational transformations</td>
</tr>
<tr>
<td></td>
<td>Conserving abstracts in spatial perspectives</td>
<td>Producing notational transformations</td>
</tr>
<tr>
<td></td>
<td>Deduction/formal logic</td>
<td>Comprehending inferences</td>
</tr>
<tr>
<td></td>
<td>Inductive reasoning</td>
<td>Judging symbolic results</td>
</tr>
<tr>
<td></td>
<td>Decision making</td>
<td>Producing symbolic implications</td>
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<tr>
<td></td>
<td></td>
<td>Creative consequences</td>
</tr>
</tbody>
</table>

Students use materials prescribed for them based on a diagnostic test. Computer software gives analyses and prescriptions. Training materials include source books of lesson plans and teaching strategies ($12.00), ability training kits of self instructional modules ($16.00 to $48.00), and memory training materials ($5.00 to $15.00). There is an Introductory packet available for $67.85.
Two half hour lessons a week are recommended. Can vary.

Mary Meeker. Program is based of J. P. Guilford's theory of intelligence.

SOI Systems
P.O. Box "0"
Vida, OR 97488
(800) 835-3382
(503) 896-3936
GOAL
To teach teachers to teach students to take command of their own learning.

INTENDED AUDIENCE
Teachers (K-12) and supervisors.

ASSUMPTIONS
Students need to be able to think in order to be productive citizens and to be able to meet the challenges of the future.

SKILLS
Participants learn:
- how to train teachers
- 22 thinking skills or mental tactics
- how to present exact tactic
- how to develop lesson plans for each thinking skill
- a set of strategies or teaching thinking throughout the curriculum.

PROCESS/MATERIALS
A teacher's manual offers step-by-step lessons with objectives teaching strategies and examples. ($12.00) A trainer's manual is available for $35.00. Videotapes of training session are available for $545.00 from ASCD. (A special preview tape is available for a 2-day loan for $20). While the print materials are complete in themselves, it is recommended that trainers take the training institutes. These 3-day intensive sessions provide you with the materials and expertise to train others. Cost is $300.

TIME
Skills are to be integrated into regular curriculum. Training institutes last 3 days.

DEVELOPER
Dr. Robert Marzano

AVAILABLE FROM
Association for Supervision & Curriculum Development (ASCD)
125 North West Street
Alexandria, VA 22314
(703) 549-9110

OR
Mid-Continent Regional Educational Laboratory (MCREL)
Suite 201
12500 East Iliff Avenue
Aurora, CO 30014
(303) 337-0990
GOAL
To teach students cognitive skill development and analytical reasoning.

INTENDED AUDIENCE
Middle elementary students and junior high school students, or secondary students with limited vocabularies.

ASSUMPTIONS
Four types of thinking skills are necessary for successful academic performance - identifying similarity and difference, recognizing and completing sequence, determining classification and drawing analogies.

SKILLS
Figural similarities, sequences, classifications and analogies; verbal similarities, sequence, classifications and analogies.

PROCESS/MATERIALS
The program presently includes these six books:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Title</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-2</td>
<td>Building Thinking Skills: Primary</td>
<td>($19.95)</td>
</tr>
<tr>
<td>2-4</td>
<td>Building Thinking Skills: Book1</td>
<td>($11.95)</td>
</tr>
<tr>
<td>4-7</td>
<td>Building Thinking Skills: Book2</td>
<td>($11.95)</td>
</tr>
<tr>
<td>6-10</td>
<td>Building Thinking Skills: Book3-Figural</td>
<td>($14.95)</td>
</tr>
<tr>
<td>6-10</td>
<td>Building Thinking Skills: Book3-Verbal</td>
<td>($14.95)</td>
</tr>
</tbody>
</table>

All books contain pencil-and-paper exercises on thinking skills basic to content objectives. These written exercises are followed by class discussions during which the thinking process is examined, clarified, and refined. Follow-up exercises provide practice and reinforcement. Teacher manuals available at additional cost ($15.95).

TIME
Variable.

DEVELOPERS
Howard and Sandra Black. Primary by Warren Hill and Ronald Edwards.

AVAILABLE FROM
Midwest Publications Company, Inc.
P.O. Box 448
Pacific Grove, CA 93950
(408) 375-2455
FUTURE PROBLEM SOLVING

GOAL
To develop students' creative problem-solving skills as they consider ways to solve predicted problems of the future. Program also embraces several other objectives: (1) increase students written and verbal communication skills, (2) help students become better team members (3) develop and improve students' research skills and (4) enable students to integrate problem-solving process into their daily lives, and (5) improve students analytical and critical thinking skills.

INTENDED AUDIENCE
Grades 4-12. A noncompetitive primary division has also been designed for students in grades K-3. To date, the program has appealed primarily to gifted students.

ASSUMPTIONS
Consideration of issues related to the future helps students prepare for the future.

Problem-solving skills and creativity are necessary to function effectively.

Creativity and problem-solving can be taught.

SKILLS
Skills relate to the formal problem-solving process developed by Osborn & Parnes.

PROCESS/MATERIALS
Practice problems are the heart of the program. Teams of (4) students receive a set of practice problems. Students employ the following steps in solving these:

- Research general topic
- Brainstorm possible problems related to the given situation
- Identify one underlying problem
- Brainstorm alternative solutions
- Develop 5 criteria for evaluating solutions
- Identify the best solutions

Results of this process are sent to trained volunteers who review these. State & National Bowls and Scenario Writing contests are held each year. Fees are about $55 for competitive Division and $25 for primary.

TIME
Varies; often one hour per week.

DEVELOPER
E. Paul Torrance. Program is based on the problem-solving model of Alex Osborn and Sidney Parnes.

AVAILABLE FROM
In MD or DE:
Dr. Ann Crabbe
St. Andrews College
Laurinburg, N.C. 28352
(919) 276-8361
In NJ:
Jean Carleson or Doug String
F.P.S. of NJ
Box 474
Sommers Point, NJ 08244
(609) 927-3455

In PA:
Elliot Sief
Buck Co. IU 22
Crosskeys Building
Rts. 611 & 311
Doylestown, PA
(215) 348-2940
GOAL
To enable students to read interpretively and to think independently and reflectively.

INTENDED AUDIENCE
Students from second grade through high school. Designed for students reading at grade level or above. There is also a two day in-service course to prepare teachers to use the program.

ASSUMPTIONS
To read interpretively is to think independently and reflectively.

SKILLS
Students develop the habit of reading critically, interpreting what they read, and supporting their interpretations with ideas and facts from the readings. They also learn new ways of looking at themselves, their fellow-participants, and the world around them.

PROCESS/MATERIALS
It is a reading and discussion program based on a method of learning called shared inquiry. Teachers act as discussion leaders and lead discussions on problems of interpretations to which they themselves are not sure of the answer. They view students as partners in a joint effort to uncover new meanings in some of the outstanding works of literature of the past and present. Teachers training lasts 2 days and costs $60 (per person) (Training will occur in Philadelphia in June and Trenton in July). In addition to the actual reading selections, each Junior Great Books Series includes a short course on interpretive reading - statements and exercises on shared inquiry that are designed to teach and reinforce reading comprehension and discussion skills. Cost of student books vary from $7.35-8.35 according to level. Teacher lesson plan booklets are $3.25 per grade.

TIME
Students meet - usually once a week - for twelve sessions to discuss a story everyone has read in advance. Discussions last for 30-90 minutes, depending on grade level.

DEVELOPER
The Great Books Foundation

AVAILABLE FROM
The Great Books Foundation
40 East Huron Street
Chicago, Illinois 60611
(312) 332-5870
INSIGHTS
(CHICAGO MASTERY LEARNING READING PROGRAM)

GOAL
To equip students with the learning strategies and study skills they need to succeed in school, and in their everyday lives.

INTENDED AUDIENCE
Elementary School level roughly grades K-8. It can be used with students of varying abilities and socio-economic backgrounds.

ASSUMPTIONS
Almost all students can learn what only the best students currently learn, if only the more typical or less able students are given appropriate learning opportunities.

SKILLS
Skills taught include using sentence context to determining word meanings, determining moods conveyed by sentences, comprehending comparisons, and distinguishing facts from opinions.

PROCESS/MATERIALS
There are two books at each grade which teaches somewhat different skills. The emphasis in all books, however, is on learning to learn. Within each level book (grade) there are two kinds of units: comprehension and study skills at grades 5-8 and comprehension and word attack/study skills at grades K-4. Mastery learning is described as differing from traditional instruction primarily in the systematic and frequent use of formative and diagnostic testing within each unit. Instruction is done in groups, with individual assistance and remediation as necessary. Each unit contains these parts: student activities, optional teaching activities, formative tests, additional activities, enrichment activities, retests, and subject-related applications. The silver (grade 8) sequence for comprehension contains units on supporting facts, research aids, notetaking in outline form, summaries and generalizations, comprehending road maps, and understanding forms and directions. Student books are $4.50. Teacher manuals are $20 (There are 2 for each grade level). There is also a Test component and evaluation books are available for $2.00 or duplicating masters for $20.00 per grade. A Record Keeping System which includes a wall chart and progress forms sells for $10.

TIME
Can be implemented as part of the regular reading program.

DEVELOPER
Chicago Board of Education

AVAILABLE FROM
Mastery Education Corporation
85 Main Street
Watertown, MA 02172
(617) 925-0329
or
(800) 223-3214
GOAL
To develop thinking and problem-solving abilities in order for students to become autonomous learners. (To alter the characteristically passive and dependent cognitive style of slow learners to that of active, self-motivated, independent thinkers.)

INTENDED AUDIENCE
Upper elementary, middle, and secondary students. Supplements regular curriculum. Involves teacher training.

ASSUMPTIONS
Intelligence is modifiable.

SKILLS
Skills taught are mental operations such as: Gathering information, problem-solving, classifying/comparing, orientation in space, recognizing relationships, following directions, planning, organizing, logical reasoning, inductive & deductive reasoning, and synthesizing.

PROCESS/MATERIALS
Students do paper-and-pencil lessons called "instruments" which are followed by teacher-led discussions. The program emphasizes this teacher mediation. The cognitive tasks are not subject-specific, but parallel the subject matter being taught. Whatever the particular focus of an instrument, its larger purpose is to further develop the students' conscious thought processes and to aid in their discovering practical applications for those processes.

TIME
Two-three hours a week over a three-year period. Can be adapted to a two year cycle. Teacher training involves a minimum of 45 hours each year.

DEVELOPER
Reuven Feuerstein

AVAILABLE FROM
Curriculum Development Associates, Inc. (Dr. Frances Link)
Suite 414, 1211 Connecticut Avenue, NW
Washington, DC 20036
(202) 293-1760

Or

Scott, Foreman & Company
Lifelong Learning Division
1900 E. Lake Avenue
Glenview, IL 60025
(312) 729-3000
MUSCLES OF THE MIND

GOAL To teach students important thinking skills and problem-solving habits through games.

INTENDED AUDIENCE Anyone; families, school groups or individuals can all use the program, for people need no specific prior knowledge. Program is inter-disciplinary, applicable, and adaptable to all school subjects.

ASSUMPTIONS Mental functions can be improved through proper "exercise."

Games are fun and motivate people to "exercise" their minds.

Research has shown the value of games for learning.

SKILLS The program concentrates on these skills:
Logical reasoning (deductive & inductive)
Strategy
Memory
Creative Thinking
Communication
Visualization
Problem-solving
Psychomotor Skills

PROCESS/MATERIALS Teacher serves as a guide and arranges for students to play games emphasizing different skills in the same classroom session. The teacher organizes game competitions and directs students to prepare game problems for each other. The teacher also helps the class to see ways to apply principles from the games to their own lives. The basic materials used are such things as paper, pencils, cardboard, ordinary playing cards, coins, buttons, magazines, and other everyday objects, as well as a kit (which can be inexpensively bought or built) of cards with numbers, letters, colors, and shapes, and playing boards. A set of 3 books and activity kit cost $40.00. Separately each cost $12.95. Book titles are:
Visual Thinking: Entertaining Activities to Increase Intelligence.
Brain Muscle Builders: Games to Increase your Natural Intelligence.
Muscles of the Mind Program: A practical Method to Improve Thinking.
Muscles of the Mind Game and Activity Kit.

TIME Variable.

DEVELOPERS Marco Meirovitz and Paul I. Jacobs (Meirovitz is the inventor of the game Mastermind.)
GOAL
To improve reasoning abilities by having students think about thinking as they discuss concepts of importance to them.

INTENDED AUDIENCE
Kindergarten through high school levels, but it is generally used in the upper elementary and secondary levels.

ASSUMPTIONS
Children are by nature interested in philosophical issues such as truth, fairness, and personal identity.

Children should learn to think for themselves.

SKILLS
Program lists 30 thinking skills that it fosters: some of these are drawing inferences, making analogies, forming hypotheses, and classifying.

PROCESS/MATERIALS
Students read special novels with inquisitive children as characters, then engage in classroom discussions and exercises. Each chapter contains a number of "leading ideas". The author's objective is for students to identify with the characters and to join in the kinds of thinking depicted in the readings. The early elementary portion of the program provides students with a broad array of situations that challenge them to practice reasoning and inquiry skills; the middle school portion introduces them to the principles underlying such practices; and the later portion enables them to apply their cognitive skills to a variety of academic and life situations. Specific programs are listed below:

Early Childhood Curriculum

Program: Reasoning About Nature
Grade Range: K-5 Target grades: 3-4
Novel: Kio and Gus ($7.00 paper bound)
Manual: Wondering at the World ($30.00)

Program: Reasoning About Language
Grade Range: K-5 Target Grades: 3-4
Novel: Pikie ($7.00)
Manual: Looking for Meaning ($30.00)

Curriculum for Middle School

Program: Basic Reasoning Skills
Grade Range: 4-7 Target Grades: 5-6
Novel: Harry Stottlemier's Discovery ($7.00)
Manual: Philosophical Inquiry ($30.00)
Curriculum for Middle School

Program: Basic Reasoning Skills
Grade Range: 7-12 Target Grades: 7-8
Novel: Lisa (2nd ed) ($7.00)
Manual: Ethical Inquiry ($30.00)

Curriculum for the Secondary School

Program: Reasoning in Social Studies
Grade Range: 9-12 Target Grades: 11-12
Novel: Mark ($7.00)
Manual: Social Inquiry ($30.00)

Program: Reasoning in Language Arts
Grade Range: 8-11 Target Grades: 9-10
Novel: Suki ($7.00)
Manual: Writing: How and Why ($30.00)

TIME
About two and one quarter hours weekly for the entire year.

DEVELOPER
Matthew Lipman

AVAILABLE FROM
Institute for the Advancement of Philosophy for Children
Montclair State College
Upper Montclair, NJ 07043
(201) 893-4277
STRATEGIC REASONING

GOAL
To teach students the fundamental thinking skills, reasoning abilities, and problem-solving techniques for functioning effectively in and out of school.

INTENDED AUDIENCE
Upper elementary, middle, secondary and community college level. It can be used in English, reading, math, social studies, and science courses. For any given population of students, appropriate instructional levels are identified and assigned. Minimum amount of staff development is required for implementation.

ASSUMPTIONS
There are six primary, natural thinking skills that form the core of all thinking and problem solving.

The ability to use these productively depends on experience and training.

These six skills can be taught to all students within the regular classroom.

SKILLS
Six thinking skills taught are:
   Identification (thing-making)
   Description (qualification)
   Classification (organization)
   Structure Analysis (part-whole relations)
   Operation Analysis (sequencing)
   Seeing Analogies.

PROCESS/MATERIALS
Program includes teacher strategies, problem-solving activities and interdisciplinary applications. The program combines the six problem-solving skills with Dr. J. P. Guilford's Structure of Intellect, to provide the student with systematic and rigorous training in the logical processes of thinking. Conscious application and transfer activities are provided through three separate but complementary strands: non academic, academic, and real life. Activities progress from easy to moderate and end with the difficult. Non academic $3.00. Teacher starter packages are $298.00. Staff development is optional and can be obtained at 250 per day.

TIME
One period per week.
DEVELOPER


AVAILABLE FROM

Innovative Sciences, Inc.
300 Broad Street
P.O. Box 15129
Stamford, CT 06901-0129
(800) 243-9169
**GOAL**
To engage students in higher-order thinking activities in order to strengthen their basic skills and social confidence.

**INTENDED AUDIENCE**
Chapter I students in grades 3-6. Can also be used with average students.

**ASSUMPTIONS**
Basic skills is not a prerequisite for engaging in higher-order thinking skills.

Thinking activities should be organized in the same manner that the brain seems to organize information in long-term memory.

**SKILLS**
Developing and testing problem-solving strategies, interpreting computer feedback, integrating and synthesizing information and generalizing across content areas.

**PROCESS/MATERIALS**
This is a pullout-type program with heavy reliance on computer activities. Students work in a computer lab. Work on the computer is preceded by a discussion in which teacher poses challenge questions for students to work on. Curricular materials include lesson plans, recommended software and instructional techniques. The HOTS curriculum provides the lab teacher with a day-to-day script which structures the problem-solving and linkage activities that students will engage in.

**TIME**
Chapter I students would have four lessons per week. Average students would need less.

**DEVELOPER**
Stanley Pogrow. Program is based on cognitive psychology theories about the organization of information in the brain.

**AVAILABLE FROM**
Stanley Pogrow
College of Education
University of Arizona
Tucson, AZ 85721
(602) 621-1305
GOAL
To assist students in becoming active participants in the process of expanding and developing creative and cognitive skills.

INTENDED AUDIENCE
Students ages 3-13 programs can be adapted for students of varied abilities. Can be taught both by parents and teachers.

ASSUMPTIONS
Based upon deBono's CoRT model; same assumptions.

SKILLS
Lessons referenced against the most sophisticated levels of Bloom's Taxonomy.

PROCESS/MATERIALS
For Just Think Programs (K-age 12), two types of lessons are given for each of the 30 week school year. The kindergarten program is $15.00 and all others, $25.00. In young think for ages 3 & 4 there are 100 lessons; cost is $15.00. Stretch Think Programs for ages 5-13 are designed for a 25 week school year and cost $35.00. The two types of lessons are:

- Cognitive Skill Development Lessons which teach thinking through examinations of specific issues and problems
- Lateral Skill Development Lessons which explore a wide range methods and solutions to creative problems and design ideas.

These programs were developed and taught in Department of Defense Schools in U.S. England, and the Netherlands.

TIME
School year. Programs are Sequential.

DEVELOPER
Sydney Tyler

AVAILABLE FROM
Thomas Geale Publications, Inc.
P.O. Box 370540
Montara, CA 94037
(213) 276-6394
READING AND THINKING STRATEGIES

GOAL To promote children's metacognition about reading strategies in order to improve their reading comprehension.

INTENDED AUDIENCE Grades 3-4 and 5-6, reading language arts.

ASSUMPTIONS Principles of cognitive strategies and self-regulation fostered by metacognition can be translated directly into practical classroom instruction which helps students read better. It is important to equip students with knowledge, skills, and attitudes that will promote continued learning.

SKILLS Reading strategies, how they operate, when they should be applied and why they foster comprehension.

PROCESS/MATERIALS Two of the key features of Reading and Thinking Strategies are the use of metaphors (on Posters) to teach strategies and the use of group discussions. The instructional techniques resemble cognitive coaching. Materials consist of 18 (9 for grades 3-4 and 9 for grades 5-6) instructional modules which focus on a particular strategy, such as finding a main idea. Each module has 3 separate 45 minute lessons designed for whole group instruction. Classroom price is $150 for a kit consisting of 9 Posters and 3 lesson plans for each module, and 10 workbooks (96 pp).

TIME Variable

DEVELOPERS Paris, Cross and Lipso (University of Michigan)

AVAILABLE FROM DC Health & Co.
(Karen Kaplan)
125 Spring Street
Lexington, MA 02173
(217) 860-1372
SAGE

GOAL
To develop higher order and critical thinking skills and to improve academic achievement.

INTENDED AUDIENCE
Approved by JDRP (1986) for academically/intellectually gifted and talented students grades 1-5.

ASSUMPTIONS
Academically talented and gifted students are not necessarily good thinkers.

SKILLS
Critical, inductive, deductive and creative thinking skills.

PROCESS/MATERIALS
The regular school curriculum is extended based on a three-fold model incorporating thinking skill development, mini-study units, extensions of the basic curriculum, are interdisciplinary in nature, and incorporate thinking skills activities in broad topic areas. A two-day training program is required at $150 a day. Sage program materials are $105 per set. An annotated listing of commercial materials which augment the program is available to adopters for $4.50. Awareness materials are available at no cost and visitors are welcome to the project site by appointment.

TIME
Regular instruction

DEVELOPER
Sandra Cymerman and Diane Modest

AVAILABLE FROM
Sandra Cymerman, Disseminator
Diane Modest, Director
Project Sage
Barbler School
Framingham Public Schools
Dudley Road
Framingham, MA 01701
(517) 872-4253
(517) 872-3546
GOAL: To teach vocabulary acquisition as a set of thinking processes.

INTENDED AUDIENCE: Grades 1-6

ASSUMPTIONS: In order to learn concepts you must deeply process them. Dictionaries are not always necessary in order to teach vocabulary words.

SKILLS: Strategies for language building.

PROCESS/MATERIALS: The program presents seven different strategies such as visualizing, categorizing, scaling and word analysis for learning new words. The teacher's (12.00) manual gives instructions in how to teach each strategy. Student booklets ($4.00) contains practice exercises. A teacher's manual comes free with a class order of student booklets.

DEVELOPER: Beau Fly Jones

AVAILABLE FROM: Mastery Education Corporation
85 Main Street
Watertown, MA 02172
(617) 926-0329
(800) 225-3214
WRITING AND THINKING - A PROCESS APPROACH

GOAL
To develop enthusiastic, effective student writers.

INTENDED AUDIENCE
Grades 1-6

ASSUMPTIONS
Writing and thinking require the same processes. Students need to think in order to write.

SKILLS
Writing and thinking.

PROCESS/MATERIALS
Students go through a five stage process:
- setting the stage and planning the per
- writing a first draft
- revising and editing
- writing the final draft
- post writing

Teachers manuals or resource books are $65 and include duplication masters, or you can buy student workbooks at $4.00 per book. (A teacher’s manual comes with a set of student books). Worksheets in the student books are designed to help students perform discrete tasks such as to organize information or take notes.

TIME
Part of regular language arts program (two or three times per week).

DEVELOPER
Linda Adelman

AVAILABLE FROM
Mastery Education Corporation
85 Main Street
Watertown, MA 02172
(617) 926-0329
(800) 223-3214
ODYSSEY

GOAL
To enhance the ability of students to perform a wide variety of thinking skills.

INTENDED AUDIENCE
Upper elementary and middle school students. It has also been used for remediation with high school students. The program originally developed for use in Venezuela as part of that country's Project Intelligence. It is intended for regular heterogeneously grouped classes.

ASSUMPTIONS
Performance of intellectually demanding tasks is influenced by various factors.

Some factors are modifiable and can be taught.

SKILLS
Skills include careful observing and classifying, deductive and inductive reasoning, the precise use of language, the inferential use of information in memory, hypothesis generating and testing, problem solving, inventiveness and creativity and decision-making.

PROCESS/MATERIALS
Approach is deliberately eclectic. It combines knowledge from current cognitive research with the methods of direct instruction. Some lessons involve a Socratic inquiry approach, while others are based on a Piagetian-like analysis of cognitive activities. Still others emphasize exploration and discovery. Materials include six teacher manuals ($15.00 each) and student books ($4.00 each):
- Foundations of Reasoning
- Understanding Language
- Verbal Reasoning (by end of year)
- Problem Solving
- Decision Making
- Inventive Thinking

These are intended to be used in the above order.

TIME
Three to five lessons per week. Each lesson about 45 minutes.

DEVELOPER
A team of researchers from Harvard University, Bolt Beranek and Newman Inc., and the Venezuelan Ministry of Education. D. N. Perkins helped to develop a portion of this program (creative thinking) and has popularized the Inventive Thinking materials.

AVAILABLE FROM
Mastery Education Corporation
85 Main Street
Watertown, MA 02172
(617) 926-0329
(800) 225-3214
THINKERPOSTERS: KEYS TO CRITICAL THINKING

GOAL
To improve students' critical thinking by raising their consciousness of a number of key dimensions that distinguish good from bad critical thinking.

INTENDED AUDIENCE
Students in grades 5-8.

ASSUMPTIONS
The heart of critical thinking is being alert to the difference between strong and weak grounds for belief or choice.

It is not enough just to know the difference; alertness is called for.

PROCESS/MATERIALS
Program is not intended to be a full course in critical thinking. Program cost $24.95 and includes:

- 8 posters with Teachers Guide for each
- Reproducible activity sheets
- Lessons to reinforce skills.

The poster serves as a focus for discussion and activities. The teacher and the student talk about the contrast introduced and the examples on the poster. The students do an in-class exercise provided on the poster. Then there is an assignment or activity for independent work that may last overnight or for several days. Finally, there is a "wrap-up" activity in which students share the results of their independent work. These steps provide the students with several rounds of practice in using the key contrasts and reinforce their awareness of it. Lessons can be linked to any subject matter. Many of the lessons call for issues to discuss. Although some are suggested teachers can make up their own, choosing issues from history, literature, and so on.

TIME
Each lesson has an introduction to be taught one day and a conclusion to be taught a day or two later. The introduction requires from a half to a whole period. So does the conclusion. It is recommended that teachers teach at least one lesson per week and no more than two. That means that the entire series will take from 5-10 weeks.

DEVELOPER
D. N. Perkins

AVAILABLE FROM
Sundance Publishers & Distributors, Inc.
Newtown Road
Littleton, MA 01460
(617) 486-9201
GOAL

To teach students to develop original solutions to problems by learning to change their perceptions. (The lessons focus on the perceptual aspect of thinking.)

INTENDED AUDIENCE

Developer believes that thinking is best taught to 9-12 year-olds. However, it has been used with students from 8 to 22. The lessons have been taught to students ranging in I.Q. from below 80 to above 140. The lessons have also been used with groups of mixed ability.

ASSUMPTIONS

There are two stages in thinking: perception and analysis.

Perception skills are neglected by schools and deserve greater attention.

SKILLS

Perception tools that help students function better in his or her life outside of school. An example of such a "tool" is the PMI (for Plus, Minus, Interesting) which is intended to help students develop the habit of considering new ideas without immediately judging them as good or bad, right or wrong. Students are taught to "do an OPV" (for Other Point of View) or "do a CAF" (Consider All Factors) when making decisions.

PROCESS/MATERIALS

The CoRT program; second edition has six sections or units (CoRT to Cort VI) each containing 10 lessons. After section I, the lessons can be used in any order. Process consists of a teacher giving an explanation of a "tool" and students practicing using it in a variety of situations. There is an introductory packet available for $15.00. The total package cost $185.00.

TIME

One lesson (35 minutes or longer) each week for three years.

DEVELOPER

Edward de Bono. Cognitive Research Trust is the name of de Bono's organization in Cambridge, England.

AVAILABLE FROM

Pergamon Press, Inc.
Fairview Park
Elmsford, NY 10523
(914) 592-7700

Or

Christine Maxwell, CoRT Editor
(415) 841-7715
CREATIVE PROBLEM SOLVING (CPS)

GOAL
To develop in students the abilities and attitudes necessary for creative problem solving.

INTENDED AUDIENCE
Gifted middle level, and all secondary students.

ASSUMPTIONS
Creativity involves the application of knowledge, imagination and judgement to problem solving.

Everyone has creativity.

Creativity can be increased through teaching and practice.

SKILLS
Sample skills include sensing problems, observing and analyzing facts, deferring judgment, discovering new relationships and ideas, evaluating consequences, developing action plans and developing feedback systems.

PROCESS/MATERIALS
Students are provided many opportunities to practice solving problems. Materials include a student activity book and an instructor's guidebook. This guidebook offers additional exercises, readings, films and test sources.

TIME
Varies. Material is best used in instructional blocks of 60 minutes. Plans for short and long programs are suggested.

DEVELOPER
Sidney J. Parnes. Program is based on the work of Alex F. Osborn.

AVAILABLE FROM
Bearly Limited
149 York Street
Buffalo, NY 14213
(No Phone)
CRITICAL ANALYSIS AND THINKING SKILLS (CATS)

GOAL
To teach students how to apply critical thinking skills to problems and issues.

INTENDED AUDIENCE
CATS has been approved by the JDRP (1986) as a program for high school students (grades 9-12) of all ability levels. CATS has also been used with students in the lower grades. It has been used in social studies, language arts, and related classes. There is a special ADVANCED CATS for the gifted student.

ASSUMPTIONS
Thinkings skills are necessary for rational decision making.

SKILLS
Basic critical thinking skills, decision-making, critical reading and writing persuasive essays.

PROCESS/MATERIALS
CATS projects fall into two district phases. In PHASE 1 (Defining and Evaluating, studying, learning how to precisely define issues, evaluating them, and prioritizing information). Students use a six-step decision-making process to define and evaluate issues on specially formatted worksheets. In PHASE 2 (Writing and Revising) students are asked to write persuasive essays. Students are constantly called upon to analyze and synthesize their thinking. Teachers receive CATS training in a one-day workshop. Cost for this is: trainer, $200, travel expenses, and materials at $35.00 per teacher. Included in the materials cost is the CATS Instructional Package, Making Rational Decisions. Visitors are available at the project site by appointment. Awareness training can be negotiated.

TIME
Variable. Students should complete at least 5 projects per semester.

DEVELOPER
Terry P. Applegate and W. Keith Evans

AVAILABLE FROM
Terry P. Applegate or W. Keith Evans
CATS Program
4988 Kalani Drive
Salt Lake City, UT 84117-6421
(801) 466-9365
INTELLIGENCE APPLIED

GOAL To help people understand and increase their intellectual skills.

INTENDED AUDIENCE High School or college students

ASSUMPTIONS Intelligence is a broad concept.
Intelligence can be modified.
It does not matter how intelligent people are if they are unable to use their intelligence.

SKILLS Background information on intelligence, relation of intelligence to the internal world of the individual (encoding, mapping), relation of intelligence to experience (insight, automatization, mental speed) and application of intelligence to the real world (practical situations).

PROCESS/ MATERIALS Book is appropriate as a main text for course on critical thinking, improving thinking skills, improving intelligence, or developing reasoning and problem solving skills. Could also be used as a supplementary text in courses on study skills, thinking, intelligence, reasoning etc. which teach how to think. Price is $14.95.

TIME Variable. Teacher discretion.

DEVELOPER Robert J. Sternberg

AVAILABLE FROM Harcourt Brace Jovanovich
7555 Caldwell Avenue
Chicago, IL 60648
(312) 631-3400
LEARNING TO LEARN

GOAL
To improve students' academic performance in content areas and in general reading, writing, listening and reasoning situations.

INTENDED AUDIENCE
Junior and senior high school students. It was originally designed for use with disadvantaged college students.

ASSUMPTIONS
All successful learners:
- Generate questions.
- Break down complex tasks.
- Formulate goals.
- Assess progress towards goals.

SKILLS
Generating questions, organizing information into charts and maps, reading for different types of information, and systematic problem solving.

PROCESS/MATERIALS
Content area teachers incorporate program activities into classroom and homework assignments can also be taught as a year-long course in psychology, and it includes reading on the psychology of learning. Has JDRP approval. It is available to schools through a combination of training workshops and instructional materials. Content area teachers receive field-relevant instructor manuals which review those skills most suited to a particular discipline, suggest ways of using the skills as classroom activities or homework assignments, and provide sample lesson plans. Manuals are available for teachers of Social Studies, English, mathematics, physical science, and biology/earth science. In addition, student workbooks are available in these areas. A detailed manual provides teachers of the LTL credit course with step-by-step instruction in the content and structure of the course. A student workbook gives students practice in using LTL skills and suggests ways to adapt them for use with content classwork.

TIME
Integrated into regular classes or taught as separate subject.

DEVELOPERS
Marcia Heiman & Joshua Slomianko
AVAILABLE FROM
Learning Skills Consultants
Box 493
Cambridge, MA 02138

OR

Marcia Heiman
Learning to Learn Program
Boston College
Chestnut Hill, MA 02167
(617) 552-8000
PROJECT IMPACT (Improving Minimal Proficiencies by Activating Critical Thinking)

GOAL To improve student performance in mathematics, reading, and language arts by infusing critical thinking instruction into the content areas.

INTENDED AUDIENCE Middle and secondary levels. Although designed as an alternative approach to remedial reading and math at the junior and senior school levels, it is compatible with various other content areas and grade levels. Approved by the JDRP for seventh to ninth grade students in or near the normal intellectual range. Staff development is required for implementation.

ASSUMPTIONS Thinking skills are basic to the learning process.

Thinking skills can be successfully taught to all students.

Thinking skills must be related to the curriculum.

SKILLS Sample skills include: Classifying and categorizing, ordering, identifying relevant and irrelevant information, formulating valid inductive and deductive arguments, and rendering judgments.

PROCESS/ MATERIALS Skills are presented in a lesson plan format. The Curriculum Materials Kit provides ($150) a language arts and a mathematics handbook containing 60 teacher-developed lessons. Small-group and individualized instruction are emphasized, but large group instruction and discussion are also used. Study sheets accompany each lesson and are written at various levels of vocabulary and task difficulty. Learning activities include oral and written reports, research projects, art work and dramatic presentations. Four filmstrips are included in each kit. The program also has "Home Enrichment Learning Packets" which are sent home with students. These contain supplementary materials to reinforce the aspects of skills identified as the most difficult for students to grasp.

Level I training (18 hours) in Project Impact is $200/person, $500/team of 2 teachers and their site administrator plus $35/person for the Training Manual. During this training, experts demonstrate 10 teaching behaviors that encourage and reinforce the thinking skills. The Curriculum Materials Kit is sold to trainees only. Level II training is invitational, at no cost to any district with 30 or more Level I graduates. Project impact staff arranges technical assistance on a cost recovery basis.
TIME
Two to three hours per week.

DEVELOPER
S. Lee Winocur

AVAILABLE FROM
S. Lee Winocur
National Director
Project IMPACT
Orange County Department of Education
P.O. Box 9050
Costa Mesa, CA 92628-9050
(714) 966-4375

OR

Center for Teaching of Thinking
2132 Magnolia Street
Huntington Beach, CA 92646
(714) 964-3106
PROBLEM SOLVING AND COMPREHENSION

GOAL
To teach the kind of careful, systematic, analytical thinking characteristic of academically successful students.

INTENDED AUDIENCE
College freshmen and college-bound high school students. Intended primarily as a remedial program for students who are marginally qualified for college work.

ASSUMPTIONS
A few analytical skills are largely responsible for successful academic work. These skills can be learned by poor students.

SKILLS
Topics covered include the hidden nature of thinking, the consequent need for thinking aloud, and the need for demonstration and guided practice. Students work on verbal reasoning problems, speed reading, analogy problems and mathematical word problems.

PROCESS/MATERIALS
Problem Solving and Comprehension is both text and workbook for this course. Course begins with students taking the Whimbey Analytical Skills Inventory (WASI) in order to gain insight into their own thinking. After students analyze test results and learn ways to avoid common errors, they begin solving problems. Demonstrations of correct procedures precede practice. Students usually work in pairs to solve problems with the problem solver thinking aloud to a listener. Students then study model solutions. Book is $10.95 from Erlbaum. Erlbaum also sells problem cards for $19.50 a box. Each box contains 25 copies of 40 different problems.

TIME
One semester course.

DEVELOPER
Al hur Whimbey

AVAILABLE FROM
Franklin Institute Press
Box 2266
Philadelphia, PA 19103
(215) 448-1551

OR
Lawrence Erlbaum Associates, Inc.
365 Broadway
Hillsdale, NJ 07642
(201) 666-4110
Founded in 1966, RBS is a private, non-profit educational research and development firm. Many public and private organizations fund RBS to conduct R&D projects to meet their needs. A major sponsor is the U.S. Department of Education which funds RBS to serve as the educational laboratory for the Mid-Atlantic region. This funding supports research and policy studies on key education issues, development of improvement approaches and services to schools, consultant assistance to state leaders, product development for special populations, and networking on a national level to increase the use of research-based products and knowledge. As a result, RBS has developed extensive staff experience in solving problems which now can be made available to all education professionals in the form of practical, research-based products and services.
RBS offers research-based products

<table>
<thead>
<tr>
<th>In-Service Video Network</th>
<th>A series of videotapes produced in cooperation with Instructivision, Inc. on a variety of timely instructional issues and topics designed for use in teacher professional development, tapes may be rented or purchased. Professional development planning services also are available.</th>
</tr>
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<tbody>
<tr>
<td>Context and Change</td>
<td>A training program for school improvement consisting of a book on factors affecting the success of improvement efforts, a professional development workshop manual, and a companion videotape. School improvement training and technical assistance services also are available.</td>
</tr>
<tr>
<td>Looking at Schools: Instruments and Processes for School Analysis</td>
<td>A directory describing more than 30 instruments for analyzing and assessing students, teachers, administrators, school climate, and the effectiveness of school-community relations. The instruments were selected based on technical quality, availability, and usefulness. The directory is designed primarily for school and district administrators and planning committees. School analysis technical assistance services also are available.</td>
</tr>
<tr>
<td>Your Leadership Style</td>
<td>A training program for educational leaders which focuses on observable behaviors and emphasizes the interaction between leader and work group with the goal of effective management leading to improved productivity. Program materials include a training manual and companion videotape. Leadership training workshops also are available.</td>
</tr>
<tr>
<td>PACE: Polling Attitudes of Community on Education</td>
<td>Developed by Phi Delta Kappa, these materials describe how to survey community opinions and attitudes about education based on Gallup Poll results and local interests. Included are a planning manual, Gallup Poll results, and a videotape on interview techniques. Survey technical assistance and scoring services are available from RBS.</td>
</tr>
<tr>
<td>What’s a Plan Without a Process?</td>
<td>A handbook for school work groups participating in collaborative, problem-solving and decision-making activities. Materials include sections on team building, prioritizing, problem-solving, planning, and implementation analysis. Each section is introduced with an explanation of the process and includes an activity designed to teach the steps of the process. Through use of this handbook, work groups both learn about the processes and gain experience in applying the concepts learned. Team development workshops also are available.</td>
</tr>
<tr>
<td>RBS Publications List</td>
<td>The findings and products of many RBS projects are made available in monographs on topics including school improvement, thinking skills, public-private partnerships, and at-risk youth, as well as special features. The Publications List may be obtained at no cost from RBS.</td>
</tr>
</tbody>
</table>
**School Assessment Survey:**

**Information for School Improvement**

This survey procedure measures the organizational conditions in elementary and secondary schools which promote school effectiveness and improvement (e.g., leadership, communication, conflict). The procedure includes a teacher survey, computer scoring and interpretation based on research and a normative sample—all presented in school-by-school graphic profiles, item analyses, and a summary report. RBS consultants help in interpretation and use of the findings.

**School Analysis**

This is a school or district level assessment of the quality of educational programming based on surveys, observations, document reviews, and interviews. Survey instruments, "The Dimensions of Excellence Scales," are utilized in the assessment. Results can be interpreted in a norm-referenced or criterion-referenced form based on eight dimensions found by the effective schools research to be critical to educational excellence (e.g., curriculum, teacher behavior, monitoring and assessment). Specific improvement recommendations are offered. Staff development training is available on each excellence dimension.

**Educational Evaluation**

RBS has a staff group of evaluators who design and conduct studies and technical assistance based on rigorous, but practical, evaluation technology. Services are customized to client needs and include program evaluation, program validation, program audit, needs assessment, test and questionnaire development, school effectiveness reviews, and technical training and assistance related to evaluator.

**Data Processing**

The RBS data processing group provides customized services in the preparation and management of data utilizing a variety of hardware and software systems. These services include test scoring, coding, manager* information systems, data base management, and statistical analysis.

**Public Private Partnerships**

RBS offers services related to planning and operating collaborative projects involving educational programs and private sector businesses, foundations, and other institutions. Sample projects are school-to-work, adopt-a-school, literacy training, postsecondary programs. Services are customized to client needs and include program planning, evaluation, materials development, staff training, and technical assistance.

**Strategic Planning for Educational Reform and Improvement**

This policy formulation system combines data-based decision making and strategic planning. It enables policy makers to understand, analyze, and respond more effectively to the pressures that influence the quality of students' education. RBS works with local policy makers to customize and conduct the system activities: focused issues assessment and action recommendations; targeted research studies and data summaries; and tailored policy analyses and position briefs.

**Achievement Directed Leadership**

This training service addresses staff and organizational development related to instructional programs, with the goal of increased student achievement. The content is drawn from research findings in instructional effectiveness, educational change, and professional inservice education. Training and technical assistance are customized to client needs and include extensive materials in the form of staff handbooks, training guides, and videotapes.

**Thinking Skills Development**

RBS has responded to the renewed interest in cognitive development and student achievement by offering professional development and curriculum planning services related to thinking skills. School leaders and teachers learn how to improve the cognitive aspects of instruction in their schools. Workshops feature recent R&D developments, hands-on materials, and new instructional resources. Consultant assistance also is available.
RBS staff are its greatest resource

RBS currently employs a workforce of over 50 persons, who represent a wealth of experience and expertise in a variety of educational content and technical areas. Two-thirds have been classroom teachers at the elementary, secondary, or university level; one-third have conducted research and evaluation studies within public or private organizations. One-third also have served as administrators in state or local education agencies. Three-quarters of the professional staff have advanced degrees, in over 15 academic disciplines, from a number of the nation’s finest universities. Most current staff have been with RBS for more than five years.

Representative RBS clients

Cherry Hill, NJ Public Schools
Delaware Department of Education
District of Columbia Public Schools
Edna McConnell Clark Foundation
Glenmede Trust Co
IBM
INROADS, Inc.
Institute for Vocational Equity
Instructivision
Maryland Department of Education
National Institute of Drug Abuse
New Jersey Department of Education
Pennsylvania Department of Education
Philadelphia High School Academies Association
Pleasantville, NJ Public Schools
San Antonio, TX Education Service Center
Tulsa, OK Public Schools
U.S. Department of Defense
U.S. Department of Education
U.S. Department of Labor
William Penn Foundation
Wilmington, DE Public Schools

For more information contact

Keith M. Kershner
Director of Research and Development
Research for Better Schools
444 N Third Street
Philadelphia, PA 19123-4107
215-574-9300