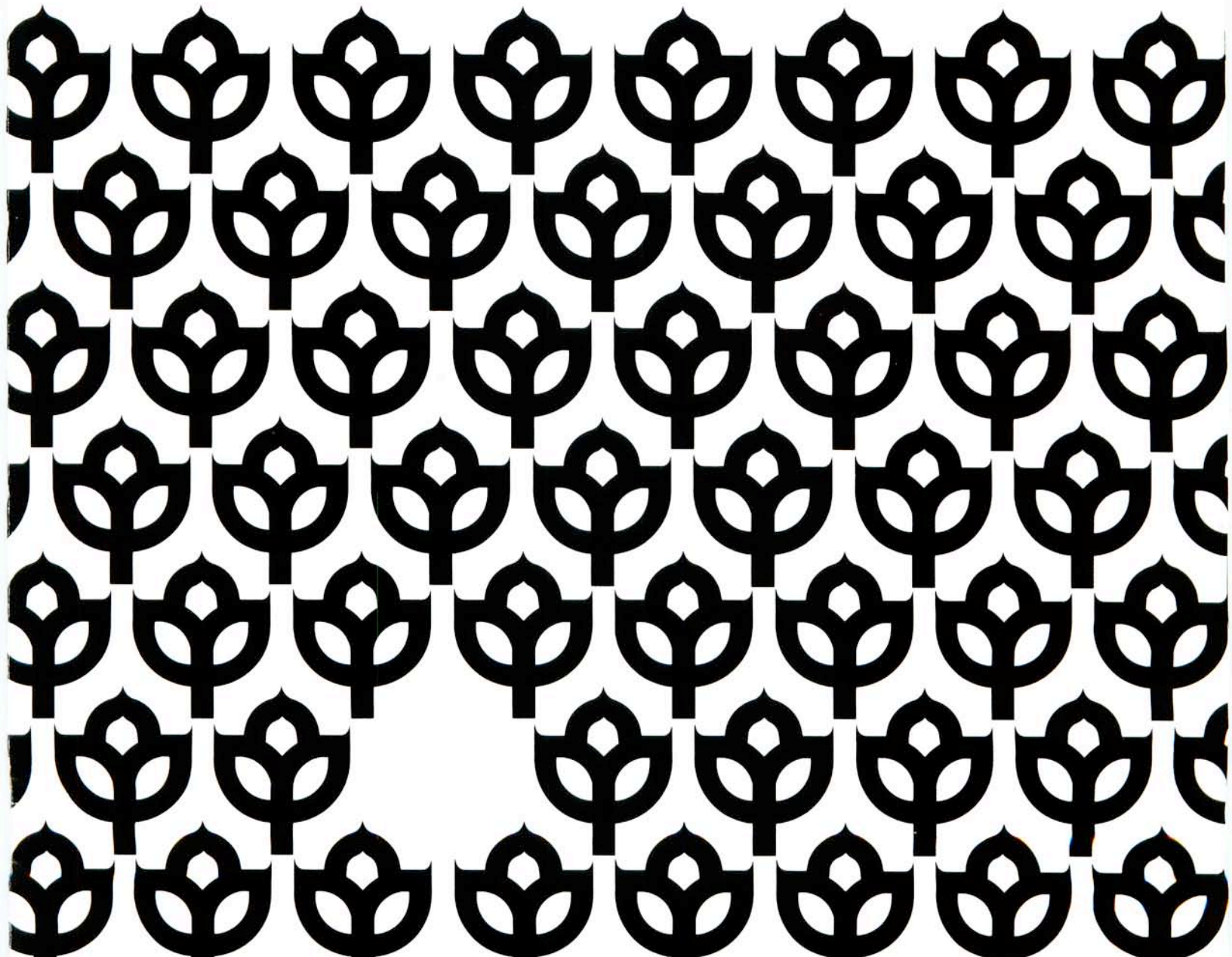


EDUCATIONAL LEADERSHIP

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Transplanting Success

Good News from a Study of School Improvement



Effects of Teaching Thinking Skills on SAT Scores

Students with about 100 hours of instruction in a Baltimore pilot program increased their SAT scores by an average of 42 points.

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Can the inclusion of a structured cognitive skills program in the language arts curriculum significantly improve student performance on the verbal portions of the Scholastic Aptitude Test (SAT)? Results of a recent study by the Baltimore City Public School System suggest that they can.

Like many other large predominantly black urban school systems, Baltimore fell considerably below the national average on the SAT. Cognitive skills instruction seemed to provide a possible means of lessening the disparity between the scores of high and low socioeconomic-status students by shifting the emphasis of classroom instruction from the acquisition of facts to increased facility in the application of thinking skills.

The study was limited to 139 students in one urban senior high school where the SAT verbal scores were particularly low and where few students aspired to go to college. The experimental group consisted of 87 seniors from the 1982 class who had participated for three semesters in a pilot program involving use of the *Think* language arts material published by Innovative Sciences, Inc.

The control group totaled 52 seniors from the 1981 senior class who had had no exposure to *Think*. The verbal scores attained on the California Achievement Test (CAT), last administered to all Baltimore City students in the eleventh grade, provided the pretest measures. Although randomization was not possi-

ble, group comparability was established through ANOVA and *t*-test analyses on the CAT total verbal scores and the reading comprehension and vocabulary subtest scores.

All students took both the CAT and SAT, but only those in the experimental group participated in *Think*. For three consecutive semesters, beginning in February of their junior year (1981), this group received instruction in thinking skills for two periods (two-fifths of their total English program) each week. For three periods a week, the students followed their regular English curriculum.

Highly significant differences (.001) were found between the scores of the experimental and the control groups on all three SAT verbal measures: vocabulary, reading comprehension, and total score. In fact, a mean increase of 42 points in the total verbal score was realized by the experimental students, moving them up to the 40th percentile in the nation ranking, 15 percentiles higher than the control group.

The highly significant differences in SAT scores alone would more than suffice to dub the program successful. But when several additional factors are considered, more dramatic superlatives seem in order. For example, while the school administration was most supportive (it paid for the test administration), the pilot began at an inopportune time; the teacher had only one full day (rather than the recommended week) of orien-

tation. And the vast majority of students in the program took the SAT because they were required to do so, having no real motivation to do their best on the test.

Why was the program so effective under far from ideal circumstances? A partial answer may be found in its approach and design.

Like most thinking skills programs, *Think* provides frequent opportunities for students to discuss the rationales leading to their conclusions in problem-solving exercises, to consider other points of view, and to analyze various reasoning processes. These dialogue and articulation processes are considered essential for providing stimulation and practice in good thinking techniques (Lipman, Sharp, and Oscanyan, 1980). While both teacher and students generally regarded the content of the program (especially vocabulary) as "too easy," the simple words seemed necessary to ensure that the processes were mastered.

The two-dimensional correlation between aptitude and achievement has

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long been recognized (Tyler, 1956; Whimbey and Whimbey, 1976). Now the Baltimore findings lend support to the inclusion of a third dimension to this correlation: facility in the application of thinking skills, as illustrated in Figure 1.

If additional research supports the findings of this study, a significant implication is that educators can lessen the disparity between SAT scores of high- and low-SES students through the inclusion of cognitive skill development programs in the secondary curriculum. □

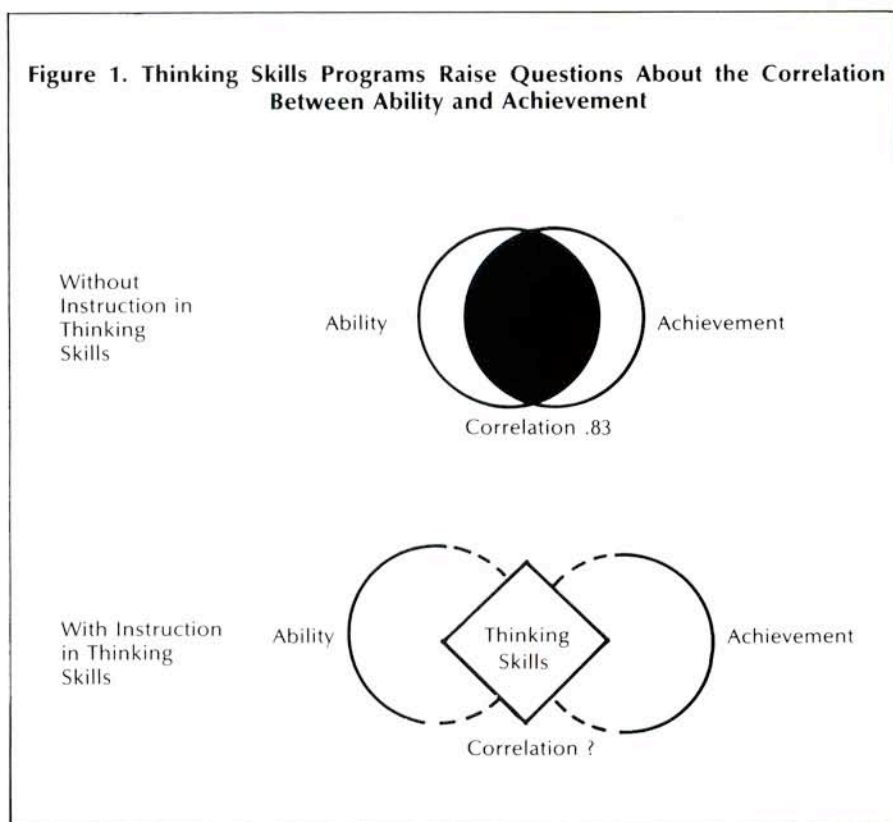
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Lipman, M.; Sharp, A. M.; and Oscanayan, F. *Philosophy in the Classroom*. Philadelphia: Temple University Press, 1980.

Tyler, L. E. *The Psychology of Human Differences*. New York: Appleton-Century-Crofts, Inc., 1956.

Whimbey, A., and Whimbey, L. S. *Intelligence Can Be Taught*. New York: Bantam Books, 1976.

Figure 1. Thinking Skills Programs Raise Questions About the Correlation Between Ability and Achievement



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Almost every major study in the last decade from the “National Assessment” to “A Nation at Risk”, strongly suggests a weakening in the student’s ability to apply higher-order thinking skills. Yet it has been widely accepted that today’s changing world places greater emphasis on the reasoning process than ever before.

These conclusions, plus declining SAT scores and years of questionable remediation, all point to a growing need to make thinking and reasoning an integral part of the educational process. For more than 10 years, Innovative Sciences, Inc., has tested, retested and refined programs that successfully combine the improvement of the thinking process with IMMEDIATE TRANSFER TO CLASSROOM APPLICATION.

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