ADI NEWS

VOLUME 11, NUMBER 5 THE ASSOCIATION FOR DIRECT INSTRUCTION FALL, 1992

INDEX ISSUE

FOCUS: Compare the Results of an Acceleration Program with the Results of a Developmental Program

SUCCESS STORY: Using Connecting Math Concepts to Accelerate Cognitive Growth 1
- Bellmawr Park School, New Jersey

And They Call This a Model School (The Results of a Developmental Model) 3
- Barbara Brown Gray

The Dichotomy Explored: Herbie's Petunias and Developmental Gardening 4
- Bonnie Grossen

EFFECTIVE PROGRAMS 6

Instructional Programs 7

Behavior Management Training and Programs 17

Staff Development 20

Program Sequences 21

Publisher Source List 23

Conference Calendar 23

HOW TO SOLICIT FUNDING FROM DONORS 24

Foundations that Support Education 24

Model Proposal 26

REVIEW: Direct Instruction to Accelerate Cognitive Growth 33
- Doug Carnine, Bonnie Grossen, and Jerry Silbert

ADI NEWS INDEX 1988 to 1992 43

From the Editor:

In this issue we break from our regular format and present you with information that will help you plan for success like that described in the Success Story on page 1. This issue contains a listing of all the instructional programs that successfully accelerate cognitive and behavioral growth and includes information you will need for budgeting. Be sure to budget for staff development if you are planning new implementations or training teachers new to Direct Instruction. A model for writing proposals to obtain non-school funding is also provided. A review article explaining Direct Instruction, its history, research, and the broader focus it now has--accelerating cognitive growth in higher level thinking--will provide you with a valuable resource for explaining DI to others. Additional research support for decision-making processes can be found in previous articles published in the ADI News. The index of the ADI articles from 1988 to the present will help you find what you need.

SUPERVISOR TRAINING OPPORTUNITIES

The Eugene ADI Conference in July is offering a number of specialized training tracks. One of these tracks is designed for persons interested in supervision and implementation. This track will provide the opportunity for people setting up DI implementations to share their expertise and learn up-to-date techniques and skill.

ADI is interested in expanding the pool of trainers and consultants. These training sessions would allow participants an opportunity to become part of a network of service delivery for school-wide implementations. Persons interested in offering their skills as consultants, trainers, or model teachers should call ADI (503-485-1293) and ask for the *Technical Assistance Survey*.

The **ADI News** is published Fall, Winter, Spring and Summer, and is distributed by mail to members of the Association for Direct Instruction. Membership and subscription information may be found on the back cover of this newsletter. Readers are invited to submit articles for publication relating to DI. Send contributions to: The Association for Direct Instruction, P.O. Box 10252, Eugene, Oregon, 97440.

Editor ..... Bonnie Grossen
Associate Editors for Research ..... Jerry Silbert
..... Russell Gersten
..... Geoff Colvin
..... Ed Kameenui
Layout ..... Wes Becker
..... Michael Rebar
Typesetting ..... Michael Rebar
Printing ..... Springfield News

SUCCESS STORY

Using Connecting Math Concepts to Accelerate Cognitive Growth

> *"I really like this program you have made. It is easy and fun. When I have homework-which isn't too much-I show my dad how to do it. My sister is in third grade and has this program. If I didn't have this program my sister would be smarter than me."*

"This is harder but it seems easier. Does *that* make sense?" It's a very common reaction to SRA's new program, *Connecting Math Concepts*, at least among fourth graders at Bellmawr Park School. They know they're doing work that middle school kids do (or sometimes can't do), but they're puzzled by the fact that it's so easy to understand. Yes, it's harder. Their brothers, sisters, cousins, parents, and teachers tell them the problems are tougher than what they used to get for homework in the fourth grade. But if the problems are that hard, why do so many fourth grade students say, "The problem explains itself without directions," or "I *really like* coordinates, fractions, and ratios."

A Solution to Years of Frustration

Bellmawr Park teachers Barbara Worrell and Patricia Sawyer have always had trouble with their math programs. Sawyer remembers, "We'd get together just before the school year and plan how we were going to get through the book. We'd try to figure out what we were going to teach and what we'd skip." Unfortunately, the planning never seemed to work completely, and they still couldn't get through the entire text with their students. Some sections were too hard; concepts of measurement and fractions were covered too quickly, and there were parts that students just didn't understand. Worrell recollects that they even tried to teach some of the harder topics like geometry twice, so that students would have a better chance of understanding them by the end of the year.

Barbara and Patricia also worried about achievement tests. "Every year we were anxious about how our kids would do on the California Achievement Test." Some students did well, but a lot of students could have done much better. Having taught math for over 20 years, both teachers felt a tremendous dissatisfaction with the available textbooks.

When Worrell heard about *Connecting Math Concepts*, "I begged Dr. Carnine (a co-author of the program) to let me pilot test the fourth grade version. I didn't even care that it wasn't a textbook yet, that it was a mound of papers still in the tryout stage."

Worrell and Sawyer have found *Connecting Math Concepts* to be much more than they expected. **"It's a real pleasure to see children so excited about math, to be doing so well on their achievement tests."** The integration of concepts, the way children work different kinds of problems every day (but practice the same kinds of problems for long enough that they master the concept), and the even pacing of the program are features that differs immensely from other math texts. But more important than anything else, the kids are really excited about math. They seem to talk about it all the time.

Students React to *Connecting Math Concepts*

Unlike the past math programs, students don't dismiss SRA's *Connecting Math Concepts* as *boring*. On the contrary, they talk about the program enthusiastically to almost anyone who'll listen—their teachers, their parents, and classroom visitors. As Worrell notes, "They're constantly asking about what's coming up next in the program. They want to know if they'll have enough time to finish concepts like functions before school is out." Their pride, confidence, and joy at being able to work complex problems fluently is irrepressible.

And suspicious as it may sound, many of the students even like doing homework. It's a chance to show their siblings or their parents how to solve a ratio word problem or multiply fractions like 4-7/8 times 6-4/5. One child is actually using her new knowledge of math to help her mother complete her high school GED. More than one student has re-

SUCCESS STORY .....Cont'd

marked, "My dad said that he wished he'd had this when he was in school."

Students at Bellmawr were more than happy to share their enthusiasm for *Connecting Math Concepts* recently when they were observed by a local university teacher trainer. Many of them said that they liked the way they can work many different kinds of problems in one day, but practice them over a couple of weeks. (This weaving together of many strands on a daily basis but providing enough practice until a skill is mastered is one of the many distinctive characteristics of the program.)

The students also thought the pacing of the program was great—it's fast enough to keep their attention, but it's presented so clearly that they almost always "get it." They also find that they are able to do problems, particularly word problems, that they have never done before. **This is something that brings a level of satisfaction that many have never had before in math.**

A final mark of *Connecting Math Concepts'* effect on students can be found in letters of appreciation written to Dr. Douglas Carnine, a senior author of *Connecting Math Concepts.* In the words of the children, not an adult evaluation of the program, these quotes communicate what SRA's program means to them.

"I love the program. I will miss Mrs. Sawyer teaching the program. I think the program is fun because we just don't do all the same problems. The program is fun and easy."

"I like this program very much. I think this made me smarter at math. When I go to Bell Oak [the local middle school] *and if we have it I am going to enjoy it again. I am going to miss fourth grade without Mrs. Worrell teaching my math class. I am going to miss the ratio and the high, high division problems. When I ask my mom a ratio problem she said forget it I can't do it."*

"I like the coordinates and ratios a lot. I had a C now I have an A. My cousin who is in 8th grade can't do anything in this program."

"I really like the program. It is really fun. You learn a lot in this program in one day. You must love to help children. You are a genius to think of that program. I hope we have this in 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th–all the way through."

$100 For Success Stories

SRA will pay $100 to the authors of Success Stories published in the coming year. Send your own stories of success to:

ADI
PO Box 10252
Eugene, OR 97440

And They Call This a Model School

by Barbara Bronson Gray

It's sitting on my desk, this colorful cardboard crown that looks like the kind of craft a child would make in a summer park program.

But it represents two hours of public school effort by a third-grade student, my son. It shows why California schools are failing our students.

This was a project designed to unite third-graders and kindergartners in a weekly buddy program, a concept born from the hottest education fad since the new math, restructuring. The goal this week was to make thinking caps. Despite the buddy system, the kids worked independently, third-graders alongside the kindergartners, gluing these simple paper structures.

After the kindergartners left and lunch recess was over, the second hour – for these suburban third-graders – was spent voting on the thinking caps. Which is tallest? Biggest? Springiest? The students looked over all the caps and then, with their heads down, voted. The effort wasn't even turned into a how-to-measure math exercise. It was looking. And voting.

This sort of activity isn't an anomaly. A few weeks ago this same group of third-graders spent most of their school day picking up trash in a nearby creek, an Earth Day project. This suburban school is a place where 110 kindergartners spent May Day having a teddy bear picnic – during school – playing on the swings and watching parents cook hot dogs and dole out carrot sticks and chips. Two classes at this school in the past two years took field trips to Universal Studios. This is in a school district that offers the children fewer than 170 full days of school a year.

What's sad is that these kids are well-prepared for academic challenge. A majority of students have had the benefit of two to three years of pre-school, and most of the families in our community include two parents. This is a place in which the average family's income approaches $70,000 and most of the parents have college degrees. This is a place where Cub Scouts and Brownies and soccer and baseball and karate and all kinds of after-school activities are widely available. So it's not that these kids are starved for fun or joy.

Sometimes the work the children bring home looks more like school than did the paper thinking cap. But it's often not corrected, with spelling and grammar errors un-noted, even on worksheets and written exercises. **Some of the teachers say that correcting children's written work inhibits the writing process and lowers their self-esteem.** The principal told me that sometimes there's just too much work for the teachers to correct it all. As for grammar, all I know is that at Open House the examples on the bulletin boards looked like the first drafts my teachers used to ask me to redo.

Remember book reports? You not only had to remember what you read, but learn to summarize and analyze and get it down on paper. Not any more. At this school, the kids make mobiles and dioramas to illustrate the book's concept.

As for writing, most of what is taught is creative writing, journal writing, free expression. Learn the structure of a paragraph? How to research a topic? How to argue a point? No, that's old-fashioned. Boring. **We'll teach that–someday, in context** – the educators say.

Even lessons about money are distorted here. Despite the fact that these bright, four-year-old classrooms lack basics like dictionaries and encyclopedias, the principal encouraged the student council – made up of first- to fifth-graders – to have a change drive for rare cycads for the school's small planters. Cycads are expensive. And tender. The school's previous batch froze last year. But the children raised about $1,000, and it will all be spent on this arcane greenery. As my son said, "Why not buy inexpensive impatiens? Or ferns?"

To encourage reading and to make even more money for the school, the students were challenged with a readathon to collectively read a million minutes – of anything – in a month. They fell short, and so the children never got to see their principal in tights, dressed up like William Shakespeare (who?) for the day.

The new restructuring fad has hit, funded by state grants looking for solutions to our education woes. **Now we hear the teacher will no longer be the instructional leader of the classroom but, rather, a coach, to assist the team players – our children – to teach themselves.** We hear we need to cut the number of school days even more, to give the teachers extra time to plan and talk together. And with the integrated curriculum – the hip word is now "framework" – we'll only read literature that relates to social studies, because it all has to fit.

And this is considered a model, one of 35 California schools nominated for Secretary Lamar Alexander's Blue Ribbon Schools Award, a nearly $1 million federal program designed to reward excellence.

The problem in these schools has little to do with money – either family money or state money – and a lot to do with our philosophy of education and our understanding of what it takes to be prepared to function in the 21st century. **It's about complacency, and maybe about anti-intellectualism, and more subtly, the idea that if you're not poor, you're destined to rule, even without the rudiments of education.**

Ms. Bronson Gray is an Oak Park, Calif., writer and a part-time lecturer at the School of Nursing at UCLA. Her two children will be attending private school in the fall.

Herbie's Petunias and Developmental Gardening

Bonnie Grossen

DI's goal to accelerate cognitive growth contrasts with the currently popular goal to provide developmentally appropriate activities and hope for the best. Developmental theorists often state that there is no relationship between teaching behaviors and learning outcomes. "Teaching does not cause learning." The impact of applying developmental theories to education can be illustrated with another little story about Herbie, the character in the Reasoning and Writing (Level E) program who learns about hypothesis testing. The reasons why developmentalists disregard experimental educational research are also examined.

At one time Herbie thought much like developmentalists. Notice the similarities in their thinking:

HERBIE	DEVELOPMENTALISTS
Herbie notices that most of his petunias are growing and only a few are dying.	Developmentalists notice that most children learn and only a few don't.
Herbie decides there is nothing he can do about his dying petunias.	Developmentalists decide there is nothing education can do with those children who have trouble learning.

But then Herbie learned that he could change this apparently natural state of things. He learned this by watering his petunias, and noticing that the dying petunias started to grow faster and bigger and stronger and none of them seem to be dying any more.

Herbie had manipulated a variable over which he had control: water. Developmental gardeners would not think of doing such a thing. Developmentalists do not manipulate variables experimentally to try to accelerate growth; they rather describe growth. **Developmental gardeners would study their original petunia garden carefully, so they can make their additional petunia gardens match the development of the original one.** No wonder all of their gardens are full of some petunias that seem okay and some that are sick and dying.

In contrast, Herbie learned how to accelerated the growth of petunias by manipulating variables he could control. Through his experimentation he learned how to grow the tallest, greenest, thickest, most colorful petunias you ever saw in your life, and he can make them grow anywhere. He has learned ways to compensate for deficiencies in their environment with light, fertilizer, mulching, and, of course, water. He has learned the relationship between what he does and how well his petunias grow. But he wisely experiments with only a few of his petunias now, so that if the experiment turns out bad (like the time he tried putting black boxes over them to "protect them"), he won't lose all of his petunias. Although Herbie is not well-known for his brilliance, he could tell developmentalists a thing or two.

Herbie found out about the dangers of developmental gardening through a tragic error in judgement. This is how it happened:

Herbie felt he needed a vacation. Herbie had learned a lot about taking care of petunias and he posted his knowledge (Herbie's "theory") on the tool shed. Herbie's tool-shed notes described what a gardener could do to compensate for the environment, for example, give more water to petunias when it is hot. It also described how a gardener should respond to the diversity in petunias, for example, if the petunia is just sprouting, give it just a little water at a time, or you will wash it clear out of the ground. Herbie thought with his knowledge so clearly posted, he could hire almost anyone to reliably take care of his petunias, so he could relax while he was away. So Herbie hired a gardener to take care of his petunias. This gardener even had a Ph.D. in gardening, which Herbie found reassuring.

Well, there was a heat wave while Herbie was gone, and by the time Herbie got back to check up on his petunias again, most of them had died. Herbie was shocked and heart-broken. The new gardener said he had been on the job, but he hadn't even looked at Herbie's theory on the tool shed because he had a different theory about gardening. **He explained that he was a developmental gardener. According to developmental theory, he told Herbie, there is no relationship between what the gardener does and how the petunias grow. It's all a natural process.** The new gardener explained that he felt he had made the best use of his time by sitting in the shade, drinking lemonade, reading about how petunias grow, and

observing with interest how the petunias were slowly wilting. He sorrowfully blamed the tragedy on the weather. It all sounded pretty silly to Herbie.

What irritated Herbie even more than losing his petunias was that this developmental gardener had the nerve to claim that he was an expert who knew more about gardening than Herbie. He made this claim because he had read all these books about how petunias grow. The developmentalist was now trying to get everyone else in the neighborhood to let him take care of their petunia gardens instead of Herbie. Herbie couldn't believe anybody so ignorant could have a Ph.D.. But this developmentalist impressed the neighbors with the big words he used, like "qualitative" and "quantitative," and also with his Ph.D. in developmental gardening; it sounded so exotic to the neighbors. Herbie's tattered theory posted on the tool shed was anything but exotic.

In the heat wave, everybody's petunias had died, so the neighbors didn't necessarily believe it was the developmentalist's fault that Herbie's had died, in spite of what Herbie said. The fact that the developmentalist didn't have a garden of his own did make the neighbors slightly skeptical. So the developmentalist had to resort to calling Herbie bad names, like "reductionist" and "behaviorist." **Finally, the developmentalist accused Herbie of manipulating and controlling his petunias so they couldn't grow freely and naturally.** That did it. The neighbors were convinced that Herbie was terribly abusive to his petunias, and the neighbors hired the developmentalist to do "developmental gardening" with their petunias.

An important truth in the Herbie story is how developmental theory has gained acceptance by being disguised as a democratic practice. A second important truth is that developmental theories can paralyze education. Developmental theories condemn education to a passive role, sobbing about the tragedies in the environment that a teacher in the classroom has no personal control over, tragedies such as single families, substance abuse, child abuse, and on and on.

In contrast, Direct Instruction theory specifies a very close, detailed relationship between teaching behaviors and learning outcomes. The knowledge of the specificity of this relationship empowers teachers. This relationship is so close and so specific, that instructional programs can even be scripted for greater reliability in producing predictable, positive learning outcomes. The nature of the relationship between teaching and learning is not really a matter of philosophy or faith. It is not a matter of being a behaviorist versus a developmentalist. It is only a matter of logic and scientific method: If Direct Instruction scripted programs work and holistic programs don't, the specific relationship between teaching and learning is confirmed.

Developmentalists often claim that experimental research like Herbie's (and Newton's) is passe in modern science. True, modern science does no longer derive new theories about quantum physics and relativity by observing the empirical outcomes of experimental research. No one observed the formation of the universe, so those theories were obviously not based on empirical observation. Likewise, theories about black holes and molecular structure were formed without observing these events. Science has gone beyond inductive methods that use empirical observations as a basis for theory.

But the new non-empirical methods are not mystical. Science now uses more sophisticated deductive methods that combine premises of previous theories to form new theories that integrate and predict more phenomena.

In contrast to what developmentalists would have us believe, science is still very logical and the predictions of new scientific theories gained through the non-empirical methods DO NOT CONTRADICT the predictions that old theories would make. **Objects don't suddenly fall to the sky instead of to the ground, now that the new scientific theory for explaining gravity was derived using a non-empirical method.** When the technology becomes available to actually observe the phenomena that modern theories predict, scientists eagerly seek to confirm the predictions of their new theories through empirical observation, as just recently occurred when a black hole was sighted for the first time.

In theory building, the raw materials of inductive methods are observations of outcomes when variables are manipulated. **The raw material of non-empirical deductive methods is the knowledge base established by inductive methods.** Science would not be able to use these new deductive methods, if there were not a very large and comprehensive knowledge base established by the empirical inductive methods of the earlier centuries. When education has a few centuries of empirical experimental research, it will also be ready for these more advanced methods. However, the educational community at large has hardly begun step one, building a fundamental instructional theory from empirical experimental research.

EFFECTIVE PROGRAMS

THAT ACCELERATE COGNITIVE AND BEHAVIORAL GROWTH

Dear Educator:

The challenge that we face as teachers is to teach effectively–so that all students learn well. The simple fact is that when children fail, the teaching has failed.

The *Direct Instruction* system prevents failure by presenting very careful teaching. The system works, for higher performers as well as for children that typically don't make significant academic progress.

The Direct Instruction system guarantees good academic growth, not through shortcuts, mystical interactions or rhetoric, but through carefully developed, field-tested, data-based intructional sequences. The results are **guaranteed** – for the bright, the slow, the "not ready," and the at-risk.

Direct Instruction will teach every child better and faster than you've ever achieved before.

There's a catch. Direct Instruction requires work, not in analyzing material and in creating lessons, but in following the specified sequences carefully and in interacting with the children in lively, fast-paced activities. At first, it's unnatural and quite different from the way you've been teaching. But it will produce results way beyond anything you've experienced.

Commit to Direct Instruction and discover how much your children can learn.

Siegfried Engelmann
Senior Author of Direct Instruction Programs

This list includes a variety of instructional resources authored by persons associated with ADI. The majority of the programs are print programs authored by Siegfried Engelmann and associates. Many teachers are aware of the programs published by SRA. However, most are unaware of the full range of programs and training packages available through other publishers. In addition to the print programs authored by Engelmann are a series of videodisc programs, also authored by Engelmann, and produced by *Systems Impact*. These videodisc programs maintain the high integrity of instructional design that appears in all of Engelmann's material.

Common features of the instructional programs include: (a) teaching for generalization, (b) organizing the content to carefully control the rate of introduction and practice, (c) inclusion of clear teaching demonstrations, (d) provision for frequent interaction between teacher and learner, and (e) learner verification prior to publication.

The list also includes a variety of materials authored by colleagues of Dr. Engelmann. Included are: college texts explaining the intricacies of Direct Instruction, computer software programs, study skills programs, behavior management texts and videos, and training packages.

The list concludes with a reference to staff development and training. ADI will serve as a clearing house in directing teachers and administrators to resources for training. Teacher training is an essential element to securing high levels of student learning. For advice on training, call ADI (503-485-1293).

CONTENTS

INSTRUCTIONAL PROGRAMS 7
Reading 7
Language Arts 9
Mathematics 12
Science 14
Additional Programs 14
Software 15
Issues and Theory 17
BEHAVIOR MANAGEMENT 17
Behavioral Assessment Tools 19
STAFF DEVELOPMENT 20
CHARTS OF PROGRAM SEQUENCES 21
Developmental Sequence 21
Remedial Sequence 22
PUBLISHER/SOURCE LIST 23
TRAINING CONFERENCES 23

Prices for the 1992/93 school year are listed for each program. The first price listed is for the teacher presentation material.

INSTRUCTIONAL PROGRAMS

READING

Reading Mastery

Here's what you need: One full set of teacher presentation materials per teacher (includes one set of student consumables); for each student, a set of consumables (take-homes or workbooks); for each student in your largest group, a textbook or storybook; for levels 4-6 you need an additional skillbook for each student in your largest group. Consumables are sold only in packages of 5.

Reading Mastery: DISTAR
Reading I
Grade 1-Disadvantaged and special education; Kindergarten-General education
Siegfried Engelmann & Elaine Bruner
SRA

Reading Mastery 1 teaches decoding and comprehension skills. Students learn how to read words, sentences, and stories, both aloud and silently. Students answer literal comprehension questions about their readings.
$299.00; Each student storybook set: $15.30; Consumables per student: $15.00

DISTAR Library (Supplement for Reading Mastery I)
SRA

Provides independent work correlated by lesson to Reading Mastery I, beginning at lesson 50. Fifty-six high interest, illustrated stories of increasing reading difficulty reinforce skills in Reading Mastery I.
$258.00 (10 copies of 6 books and Teacher's Guide)

Reading Mastery: DISTAR
Reading II
Grade 2-Disadvantaged and special education; Grade 1-General education
Siegfried Engelmann and Elaine Bruner
SRA

Reading Mastery II expands basic reading skills to include strategies for decoding difficult words and for answering interpretive comprehension questions. The program also teaches basic reasoning skills such as applying rules and completing deductions.
$299.00; Each student storybook set: $25.00; Consumables per student: $15.00

Reading Mastery: Fast Cycle
Grades K-1-General education
SRA

Fast Cycle covers all the basic word attack and comprehension skills of Reading Mastery I and II and more rapidly with less repetition and drill. Fast Cycle is designed for average and above-average students in kindergarten or first grade–those who are capable of learning at an accelerated pace. It can also be used as a "catch-up" program for students in grades 2 or 3.
$345.00; Each student storybook set: $20.00; Consumables per student: $19.60

Reading Mastery III
Grade 3-General education
Siegfried Engelmann and Susan Hanner
SRA

In Reading Mastery III, students apply rules in a wide variety of contexts and learn to interpret maps, graphs, and timelines. The program introduces a number of complex sentence forms.
$112.00; Each student text set A and B: $32.00; Consumables per student: $13.20

Reading Mastery IV
Grade 4-General education
Siegfried Engelmann and Susan Hanner
SRA

Teaches students skills for reading content area textbooks. Students evaluate problems and solutions, learn facts about the world, and complete research projects. Many of the stories incorporate science facts and rules.
$112.00; Each student text: $17.25; Each skillbook: $9.95; Consumables per student: $6.60

Reading Mastery V
Grade 5-General education
Siegfried Engelmann, Jean Osborn, Steve Osborn, and Leslie Zoref
SRA

Students read classical literature by such authors as O. Henry, Longfellow, Homer, Hawthorne. Students analyze characters, settings, plots, and themes and learn how to infer main idea and deduce word meanings from context. They also complete daily writing assignments.
$112.00; Each student text: $17.25; Each skillbook: $9.95; Consumables per student: $6.60

Reading Mastery VI
Grade 6-General education
Siegfried Engelmann, Jean Osborn, Steve Osborn, and Leslie Zoref
SRA

Students read classic literature and poetry by such authors as Langston Hughes, Kipling, Jack London, Hans Christian Anderson. Students interpret figura-

tive language, identify contradictions, and analyze arguments. They also write original stories and poems.
$112.00; Each student text: $17.25; Each skillbook: $9.95; Consumables per student: $6.60

Learning Through Literature: Story Studies
Supplement for grades K-3
Terry Dodds and Fay Goodfellow
SRA

Award-winning stories for teachers in grades K-3 to read to their students. Discussion and ongoing activities develop students' understanding of story grammars. Thematic across the curriculum activities are included. Package 1: *People/Friends;* Package 2: *Animals/Mice;* Package 3: *Caldecott Winners/ Poetry;* Package 4: *Fairy Tales/Folk Tales.*
$55.00 Each package.

Learning Through Literature: Novel Studies
Supplement for grades 3-8
Terry Dodds and Fay Goodfellow
SRA

Each package supports a thorough study of one complete novel. A typical lesson includes vocabulary exercise, discussion of background pertinent to the story, guided questioning and comprehension exercises, and story extension activities. While not grade specific, units do progress in difficulty level. Package 5: *Ramona Quimby, Age 8* (Beverly Cleary); Package 6: *Philip Hall likes me, I reckon maybe* (Bette Green); Package 7: *Little House in the Big Woods* (Laura Ingalls Wilder); Package 8: *Stuart Little* (E.B. White); Package 9: *The Enormous Egg* (Oliver Butterworth); Package 10: *Ben and Me* (Robert Lawson); Package 11: *King of the Wind* (Marguerite Henry); Package 12: *Sign of the Beaver* (Elizabeth George Speare).
$55.00 Each package.

Corrective Reading–Decoding
Grades 6-12-Remedial education
Siegfried Engelmann, et al.
SRA

Corrective Reading–Decoding is designed to help a wide range of students. The four programs progress from teaching letter sounds and blending skills (Word-Attack Basics) to reading expository passages typical of textbook material (Skill Applications).

Here's what you need: One set of teacher presentation materials per teacher; for each student, a consumable workbook; for each student in your largest group in levels B and C, a student book. Consumables are sold only in packages of 5.

A: Word-Attack Basics (65 lessons) is appropriate for students in the second half of grade 3 through high school who virtually lack decoding skills. Emphasizes basic reading skills: sounds, rhyming, sounding out, sentence reading, and story reading.
$80.00; Consumables per student: $4.05

B1: Decoding Strategies (65 lessons) is appropriate for most problem readers in grades 4 through 12 who have trouble distinguishing words in sentences and who are generally inconsistent in their reading behavior. Lesson activities discourage guessing and encourage students to read accurately up to 90 words a minute.
$50.00; Each student book: $9.50; Consumables per student: $3.50

B2: Decoding Strategies (65 lessons) is appropriate for students in grades 4 through 12 who do not read fluently, who tend to confuse words with similar spellings, and who tend to make word-guessing mistakes. Teaches students to become automatic decoders who read fluently, with increased accuracy and self-confidence up to 120 words a minute.
$50.00; Each student book: $9.50; Consumables per student: $3.50

C: Skill Applications (125 lessons) is appropriate for students who have mastered many basic reading skills but who have trouble decoding multisyllabic words and reading typical textbook materials. Bridges the gap between structured reading programs and textbooks, magazines, and newspapers by teaching students to read materials with a wide range of syntax, vocabulary, format, and content. When students have completed Decoding C, they read, on average, 130 words/minute with 98% accuracy.
$92.50; Each student book: $12.50; Consumables per student: $5.80

Corrective Reading–Comprehension
Grades 6-12-Remedial education
Siegfried Engelmann, et al.
SRA

Corrective Reading–Comprehension develops the reasoning processes, vocabulary, and writing skills students need. Reasoning is practiced, not just taught, through analogies, deductions, inductions, and classifications. Instruction focuses on precisely those skills that frustrate the majority of unsuccessful students. The four programs progress form verbal language and simple reasoning skills (Thinking Basics) to critical reading of passages similar to those found in sophisticated textbooks (Concept Application).

Here's what you need: One set of teacher presentation materials per teacher; for each student, a consumable workbook; for each student in your largest group in level C, a student book. Consumables are sold only in packages of 5.

A: Thinking Basics (65 lessons) builds the foundation from which other comprehension skills can be built: deductions, inductions, analogies, inferences, and vocabulary skills.
$80.00; Consumables per student: $4.05

B1: Comprehension Skills (60 lessons) helps students' transition form verbal to reading and writing activities. Students apply what they know about classification, deductions, and analogies. Lesson activities incorporate new vocabulary, increasingly complex sentences, and written comprehension.
$50.00; Each student book: $9.50

B2: Comprehension Skills (65 lessons) teaches literal and inferential comprehension strategies: reading for information, retaining new facts and vocabulary, analyzing contradictions, following directions. By the end of the lessons, students demonstrate a variety of real-life comprehension skills like filling out income tax forms and job applications.
$50.00; Each student book: $9.50

C: Concept Applications (125 lessons) builds on skills needed for content-area study in high school. Students learn to recognize contradictory information, evaluate advertisements and editorials, understand sources of information, extract information from written passages, and organize information for retention and reporting.
$92.50; Each student text: $12.50; Each workbook: $12.50

Teach Your Child to Read in 100 Easy Lessons
Siegfried Engelmann, Phyllis Haddox and Elaine Bruner
ADI

Teach Your Child to Read is a complete, step-by-step program using the DISTAR method that shows parents simply and clearly how to teach their child to read.
Membership Price *$15.00* List Price *$19.00; plus $4.00 postage and handling*

Direct Instruction Reading (Revised)
Douglas Carnine, Jerry Silbert, and Edward J. Kameenui
ADI

College text and teacher resource for the most effective practices for teaching reading..
Membership Price *$32.00* List Price *$40.00*

LANGUAGE ARTS

Reasoning and Writing

Here's what you need: One set of teacher presentation materials per teacher; for each student in levels A, B, and C, consumable workbooks; for each student in your largest group in levels C, D, and E, a textbook. Consumables are sold only in packages of 5.

Reasoning and Writing, Level A
Grades K-1-General education
Siegfried Engelmann and Karen Lou Seitz Davis
SRA

Level A develops higher-order thinking skills through stories that are read to the children. Predictable story structures and characters with memorable traits draw learners in. Students learn how to recognize story problems, anticipate characters' reactions, predict outcomes, and recognize story grammars. Creativity is encouraged through oral and written activities. Students tell their own alternative endings for stories. They act out plays that place their favorite characters in new situations. They cooperate in group writing projects and, from time to time, dictate their stories to the teacher.
$90.00; Consumables per student: $8.20

Reasoning and Writing, Level B
Grade 2-General education
Siegfried Engelmann, Ann Brown Arbogast, and Karen Lou Seitz Davis
SRA

Level B continues to work with story grammars while expanding thinking skills needed to comprehend different content areas. Students become more aware of classification and learn to draw logical conclusions. They use facts and clues to anticipate potential outcomes. Students also begin writing. They learn to compare details, express inferences, and write simple stories.
$90.00; Consumables per student: $8.20

Reasoning and Writing, Level C
Grade 3-General education
Siegfried Engelmann and Jerry Silbert
SRA

Level C emphasizes clear communication...applying and expanding the logical thinking skills developed in Levels A and B. Students write passages that are organized and unambiguous, including all necessary details and excluding irrelevant information. They learn to report precisely, differentiating between fact and inference.

Grammar and mechanics are taught as tools for clear communication.
$95.00; Each student text: $14.50; Consumables per student: $4.75

Reasoning and Writing, Level D
Grade 4-General education
Siegfried Engelmann and Jerry Silbert
SRA

The primary focus of Level D is on analysis. Students become critical thinkers, consumers, and communicators. They are taught to identify problems and propaganda in advertising and arguments and to clearly and succinctly express these problems. By the end of Level D, students can read and analyze an article, objectively summarize what the article states, and express in writing the inconsistencies and errors in the author's thinking. They can write precisely, give clear unambiguous directions, use facts in arguments, and distinguish general from specific. Their knowledge of grammar and complex sentence structure progresses as it is needed to express more complex thoughts.
$95.00; Each student text: $16.85

Reasoning and Writing, Level E (available summer, 1993)
Grades 5-6, General education
Grade 7-Adult, Remedial education
Siegfried Engelmann and Bonnie Grossen
SRA

Level E continues to build logical analysis skills. Students learn to identify inaccuracies by comparing given information with an accurate reference source. They learn to explain the logical fallacies, contradictions, and misleading claims that they find in material they read. Students learn to reason with cause and effect and to describe how to test hypotheses. Students take notes on aurally presented information and from them reconstruct the passage in complete prose. They write plans for achieving goals and describe the advantages of one option over others. Students learn to use context to determine meanings and to write unambiguous descriptions. They edit sentences by reorganizing them to eliminate ambiguities.
$95.00; Each student text: $16.85

DISTAR Language
Grades Pre-school-3; remedial
Siegfried Engelmann and Jean Osborn
SRA

Here's what you need: One set of teacher presentation materials; for each student in levels II and III, a set of consumable workbooks (also called"take-homes"). (A set of workbooks is necessary for Kindergarten and low-functioning children.) Consumables are sold only in packages of 5.

DISTAR Language I

The program contains 160 lessons designed to develop students' understanding of the language of classroom instruction. Students acquire a great deal of information about the world around them and practice using complete sentences, answering questions, and following verbal directions.
$340.00; Consumables per student: $12.00

DISTAR Language II

In 160 lessons, students learn word and sentence skills plus important thinking skills as a foundation for reading comprehension. Their range of information and vocabulary is extended. They develop questioning and reasoning skills and apply these skills to new situations.
$340.00; Consumables per student: $12.00

DISTAR Language III

During the 160-lesson program, students analyze the structure of spoken and written sentences. Sentence analysis is systematically expanded into the writing of sentences and paragraphs. Students follow the rules of grammar and mechanics and learn to communicate information and ideas effectively.
$216.00; Consumables per student: $14.40

Español to English
Grades K-1
For use in conjunction with DISTAR Language 1; adapted by Correl Robinson
SRA

Spanish-speaking students learn the language skills they need to understand and communicate in an English-speaking classroom. Coordination with DISTAR Language I makes it easier to help students through the transition form Spanish to English. New vocabulary and concepts are explained in Spanish and modeled in English. Spanish assistance decreases as students become more proficient in English. Emphasis is on responding to questions and making complete statements in English.
$99.50

Cursive Writing Program
Grades 3-4-General Education
Samuel Miller and Siegfried Engelmann
SRA

This 140-lesson program offers a structured approach to cursive writing. Students learn how to form letters, create words, write sentences, and improve their speed and accuracy. Special features include a simplified orthography that reduces unnecessary frills, slant arrows to assist in slanting the paper correctly, slant bars to prompt correct pacing, exercises to correct errors, and emphasis on high frequency word and letter combinations.
$44.25; Consumables per student: $5.90

Basic Writing Skills
Grades 4-8
Mary Gleason and Cynthia Stults
SRA

Step-by-step lesson plans are immediately usable. Students who are deficient in primary writing skills learn how to compose coherent, understandable, and correctly written sentences. Students learn the rules of capitalization and punctuation as well as how to recognize and write a complete sentence.

Capitalization and Punctuation	*$82.50*
Sentence Development	*$82.50*

Expressive Writing 1
Grades 4-6, middle and high school students with special needs
Siegfried Engelmann and Jerry Silbert
SRA

Five years of field testing has led to this supremely effective program. Students learn to develop sentence and paragraph skills along with editing and component skills. Teachers cut their work time by using the skill management system that allows rapid evaluation of student writing through cumulative checks which the students themselves perform. Daily lessons integrate sentence writing, paragraphing, and editing and present the material in such a way that students actually develop a love of writing.
$57.00; Consumables per student: $5.90

Expressive Writing 2
Grades 4-6, middle and high school students with special needs
Siegfried Engelmann and Jerry Silbert
SRA

Expressive Writing 2 builds on the simple sentence and paragraph writing skills covered in Expressive Writing 1 to include more sophisticated and conversational writing. Students learn to write, punctuate, and edit compound sentences, sentences with dependent clauses, direct quotations in dialogue form, and sentences that list things. Students will also learn to use their imaginations to infer events from illustrations, to understand the importance of details, to use correct mechanics to express themselves in a variety of ways, and to edit what they write.
$57.00; Consumables per student: $5.90

Spelling Mastery
Grades 1-6-General education
Robert Dixon, Siegfried Engelmann, Mary Meier, Donald Steely, and Tina Wells
SRA

Spelling Mastery is divided into six levels, A through F. These levels generally correspond to grades one through six, although lower levels in the program can be effectively used with upper level students. Students move from learning high-utility words, sound-symbol principles and general strategies in level A, to learning advanced morphemic guidelines and the interrelationship of spelling and other language arts skills in level F. Spelling Mastery ensures skill mastery through the use of accurate placement, a high level of teacher-student interaction, the use of generalization, and repeated practice, review, and application.

Level A (Grade 1) *$62.00; Consumables per student: $4.40*

Level B (Grade 2) *$72.00; Consumables per student: $6.00*

Level C (Grade 3) *$72.00; Consumables per student: $6.00*

Level D (Grade 4) *$72.00; Consumables per student: $6.00*

Level E (Grade 5) *$72.00; Consumables per student: $6.00*

Level F (Grade 6) *$72.00; Consumables per student: $6.00*

Corrective Spelling Through Morphographs
Grades 4-adult
Robert Dixon and Siegfried Engelmann
SRA

In Corrective Spelling Through Morphographs, students learn analytic techniques and predictable, highly generalizable rules (e.g., dropping the final e, doubling the final consonant, and changing y to i). Students gain independence through the practice, application, and reinforcement activities that follow

the introduction of every new spelling strategy. Careful sequencing ensures that all strategies are taught to mastery.
$120.50; Consumables per student: $8.25

MATHEMATICS

Connecting Math Concepts

Here's what you need: One set of teacher presentation materials per teacher; for each student in levels C, D, and E, a student textbook; for each student in levels A, B, and C, a workbook. Workbooks are sold only in packages of 5.

Connecting Math Concepts A
Grade 1-General education
Siegfried Engelmann and Douglas Carnine
SRA

Level A builds on the aspect of mathematics that is most familiar to children–counting. Counting experiences are developed in a variety of contexts, expanded to the concepts of more and less, and then to addition and subtraction. This foundation in number sense is extended to the representation of numbers and place value. Finally, this number sense is systematically applied to problem solving, estimation, money, and measurement.
$150.00; Consumables per student: $10.00

Connecting Math Concepts, Level B
Grade 2-General education
Siegfried Engelmann and Douglas Carnine
SRA

Level B provides many illustrations of how mathematical concepts are linked to each other and to the outside world. Number families are taught as an effective strategy for learning addition and subtraction facts, solving computational problems, and translating story problems into numerical statements. Other concepts that are taught include measurement, time, money, geometry, estimation, and mental arithmetic.
$150.00; Consumables per student: $10.00

Connecting Math Concepts, Level C
Grade 3-General education
Siegfried Engelmann and Douglas Carnine
SRA

Level C places a strong emphasis on higher-order thinking. Students learn a variety of mapping techniques for relating problem solving to real life situations. With work problems, measurement, money, and time, students graphically represent information before they attempt to calculate an answer. Key relationships are developed between addition and multiplication, multiplication and division, fractions and division, and area and volume.
$150.00; Each student text: $15.00; Consumables per student: $5.00

Connecting Math Concepts, Level D
Grade 4-General education
Siegfried Engelmann and Douglas Carnine
SRA

Building on the strong foundation of Levels A-c, Level *D* extends whole-number skills to include multiplication and division algorithms. Concepts and operations with fractions and mixed numbers are carefully presented and applied, and decimals are introduced. Extensive problem-solving activities emphasize strategies with tables, number families, and ratios. Other topics include perimeter, area, functions, and probability.
$150.00; Each student text: $15.00; Consumables per student: $5.00

Connecting Math Concepts, Level E (available summer, 1991)
Grade 5-General education
Siegfried Engelmann, Bernadette Kelly, and Doug Carnine
SRA

Level E shows the relationship between fractions, decimals, percents, and the whole-number system. Computation includes long division, estimation and operations involving fractions with unlike denominators. Problem-solving skills are extended to multistep problems, data interpretation and graphing, and complex proportions. Level E also establishes connections between the coordinate system, ratio and proportions, and geometry.
$154.00; Each student text: $16.85; Consumables per student: $5.30

DISTAR Arithmetic
Grades Preschool-2, special needs
Siegfried Engelmann and Douglas Carnine
SRA

DISTAR Arithmetic I

In 160 lesson, students acquire strategies for analyzing and solving addition, subtraction, and algebra addition problems. These strategies, based initially on counting, lead to story-problem solving. From an understanding of about 35 arithmetic facts, students use their strategies to derive unfamiliar facts and solve a wide range of problems. Some key

skill areas: Facts and Fact Derivation, Multiplication, Story Problems, Rote Counting, Symbol Identification, Equality, Addition, and Subtraction.
$360.50; Consumables per student: $15.15

DISTAR Arithmetic II

In 160 lessons, students acquire strategies for handling multiplication, operations with fractions, and problems in columns. They apply their knowledge to story problems, telling time, and determining the sums of coins. Students also broaden their knowledge of basic arithmetic facts and learn simple statements of equivalence in metric and/or standard measurement units. Some key skill areas: Fact and Fact Derivation, Multiplication, Story Problems, Problems in Columns, Fraction Operations, Length and Weight Measurement, Applications of Operations, and Negative Numbers.
$360.50; Consumables per student: $15.15

Corrective Mathematics
Grades 6-12
Siegfried Engelmann and Donald Steely
SRA

Students first develop an understanding of what the numerals mean–the facts. Clear, repetitive processes help them gain a basic need–proficiency in numbers. Once students have the basics, they can begin to work problems. Students who don't understand borrowing will. Others stymied by division will break through. Lessons progress from simple number manipulation to story problems and applications. This careful progression keeps the success flowing as students conquer math.

Here's what you need: One set of teacher presentation materials per teacher; for each student, a consumable book. Consumable books are sold only in packages of 5.

Addition *$71.00; Consumables per student: $6.00*

Subtraction *$71.00; Consumables per student: $6.00*

Multiplication *$71.00; Consumables per student: $6.00*

Division *$71.00; Consumables per student: $6.00*

Mathematics Modules
Grades 4-adult
Siegfried Engelmann and Donald Steely
SRA

Mathematics Modules takes students from the very basics of fractions through adding, subtracting, multiplying, and dividing with fractions, decimals, and percentages. Then the lessons continue with story problems up to pre-algebra level. Throughout the process, students apply what they've learned, and they don't move on until they are proficient.

Here's what you need: One set of teacher presentation materials per teacher; for each student, a consumable student book. Consumable books are sold only in packages of 5.

Basic Fractions *$71.00; Consumables per student: $6.00*

Fractions, Decimals, Percents *$71.00; Consumables per student: $6.00*

Ratios and Equations *$71.00; Consumables per student: $6.00*

System's Impact Videodisc Programs for Mathematics

Here's what you need: Monitor, laser videodisc player (level 1 minimum) with remote; Videodisc program (includes teacher's guide videodiscs, and 1 student workbook; for each student, a consumable workbook. *System's Impact* products are sold through *BFA Phoenix Film.*

Mastering Fractions (Videodisc)
Grades 5-Adult
Siegfried Engelmann and Douglas Carnine
BFA Educational Media

This 35-lesson course provides a proven system for mastering addition, subtraction and multiplication of fractions, common and mixed numbers, fractions on a number line and simplifying.
$2,145.00; Consumables per student: $3.25

Mastering Decimals and Percents (Videodisc)
Grades 5-Adult
Siegfried Engelmann and Douglas Carnine
BFA Educational Media

This 15-lesson course builds the foundation to master valuable skills, including how to read and write decimals, converting decimals, percents and whole numbers and solving simple percent word problems.
$715.00; Consumables per student: $3.25

Mastering Ratios and Word Problem Strategies (Videodisc)
Grades 7-Adult
Siegfried Engelmann and Douglas Carnine
BFA Educational Media

Building on the concepts covered in Mastering Fractions and Mastering Decimals and Percents, this

40-lesson course helps students learn to solve the full range of basic ratio and word problems, from estimating ration numbers, and rewriting equations and unit-conversions, to adding, subtracting, multiplying, dividing and rounding decimals.
$2,145.00; Consumables per student: $3.25

Mastering Equations, Roots and Exponents: Signed Numbers to Operations (Videodisc)
Grades 7-Adult
Siegfried Engelmann and Douglas Carnine
BFA Educational Media

These 30 lessons focus on problem solving skills for performing signed number operations, combining like terms, solving equations using exponents and solving simple square root and word problems.
$2,145.00; Consumables per student: $3.25

Mastering Informal Geometry (Videodisc)
Grades 7-Adult
Siegfried Engelmann and Douglas Carnine
BFA Educational Media

This program is a skill building 35-lesson course covering: perimeter and circumference, interior and surface area, volume, line and angle relationships and similarity, as well as graphing figures on a coordinate system and drawing side views and cross sections.
$2,860.00; Consumables per student: $3.75

Direct Instruction Mathematics (Revised)
Jerry Silbert, Douglas Carnine, and Marcy Stein
ADI

College text and teacher resource for the most effective practices for teaching mathematics..
Membership Price *$32.00*
List Price *$40.00 plus $4.00 postage and handling*

SCIENCE

System's Impact Videodisc Programs for Science

Here's what you need: Monitor, laser videodisc player (level 1 minimum) with remote; Videodisc program (includes teacher's guide, videodiscs, and 1 student workbook); for each student, a consumable workbook. The Earth Science program will soon have a problem-solving component for small group work. A complimentary set of labs for both programs may be available upon request from your BFA representative. *System's Impact* products are sold through *BFA Phoenix Film.*

Understanding Chemistry and Energy (Videodisc)
Grades 7-Adult
Siegfried Engelmann and Douglas Carnine
BFA Educational Media

This 20-lesson programs covers the facts and applications of atomic and molecular structure, common forms of energy, organic compounds and energy of activation and catalysts.
$2,145.00; Consumables per student: $3.25

Earth Science (Videodisc)
Grades 7-Adult
Siegfried Engelmann and Douglas Carnine
BFA Educational Media

With 35 lessons that examine physical and earth science by exploring topics from the phases of matter, to density and mass, to facts about the earth and forces of gravity.
$2,860.00; Consumables per student: $4.75

ADDITIONAL PROGRAMS

Your World of Facts
A Memory Development Program
Grades 3-6
Siegfried Engelmann, Karen Davis, and Gary Davis
SRA

This two-volume program preteaches key facts and relationships so that students can understand what their textbooks say and how new information relates to facts they already know. Volume I covers geography, machines, facts about the body, plants, and things in the same class. Volume II focuses on climate, vegetation, animal life, industries around the world, and vertebrates.

Your World of Facts I *$44.25;*
Consumables per student: $6.00

Your World of Facts II *$44.25;*
Consumables per student: $6.00

Skills for School Success
Grades 3-12
Anita Archer and Mary Gleason
Curriculum Associates, Inc.

Using research-based *Skills for Success*, classroom behaviors and study skills transfer into all subject areas. The program integrates immediately into your language arts and content area curriculum. The program emphasizes teaching good school behavior, organization skills for students, effective learning strategies, how to gain information from texts and reference books.

Book 3–60 Lessons for Grade 3 *$14.95;*
Consumables per student: $5.95, $3.95 for 5 or more

Book 4 *$14.95;*
Consumables per student: $5.95, $3.95 for 5 or more

Book 5 *$16.95;*
Consumables per student: $6.95, $4.95 for 5 or more

Book 6-78 Lessons for Grade 6 *$19.95;*
Consumables per student: $7.95, $5.95 for 5 or more

Advanced Skills for School Success
Grades 7-12
Anita Archer and Mary Gleason
Curriculum Associates, Inc.

Module 1: School Behaviors and Organization Skills

The new Advanced level focuses on school behaviors for before, during, and after class. Critical organizational and time-management skills—using a notebook and maintaining a monthly calendar—are key elements of this module.
$9.95; Consumables per student: $2.00

Module 2: Completing Daily Assignments

Students learn strategies for producing neat, well-organized legible written work. Focus is on planning assignments, writing answers to both factual and opinion questions, and proofreading assignments.
$9.95; Consumables per student: $2.00

Advanced Skills for School Success (Video)
Video Training for Teachers (55 minutes)
Anita Archer and Mary Gleason
Curriculum Associates, Inc.

Classroom demonstrations and interviews with students, teachers and parents give insights into effective program use, including: How to get started; teaching strategies, activities for maintaining the skills; suggestions for involving parents in the program; ideas for obtaining student materials through community sources and methods to promote schoolwide use of the program.
$49.95

SOFTWARE

Direct Instruction Authoring Language (DIAL)
Doug Carnine
Engelmann-Becker Corporation

A program that allows teachers to write their own software programs. The teacher writes in explanations and can insert drawings made with Dr. Italo. The teacher writes question and enters correct answer. The DIAL design provides for automatic branching for accelerating high performance student, or for providing re-specified criterion of performance; quizzes to determine a student's readiness to progress on the next lesson; automatic corrective feedback for incorrect answer; as well as ongoing data collection for each individual using the program.
$200.00

Mathematics Facts
Multiplication & Division Facts
Grades 2–8
Doug Carnine
Engelmann-Becker Corporation

If students answer "test" facts correctly, the students skip ahead in the program. When students begin at a new time, they begin where they left off in the last lesson. The program has a sequence of over 6,000 instances of facts to draw upon.
For MS-DOS ; Documentation and 2 disks

Addition and Subtraction Facts *$99.00*

Multiplication and Division Facts *$99.00*

DIAL Multiplication & Division Word Problems
Grades 6–secondary
Mary Gleason, Doug Carnine, and Lisa Moore
Engelmann-Becker Corporation

This 20-lesson program, created with DIAL, teaches a specific strategy to use in solving multiplication and division word problems. Students begin by learning how to discriminate multiplication/division problems from addition/subtraction problems. They then proceed to learn, in small, sequential steps, how to derive a mathematical equation from a word problem. From this equation, they are next taught how to determine if multiplication or division is needed to solve the problem, and to subsequently solve it.

Research with students in middle school special education classrooms has shown that using the Multiplication and Division Word Problems program to teach this problem type was at least as effective as instruction provided by an expert teacher.
For MS-DOS only; Documentation and 8 disks
$129.00

Keyboarding
Grades 2–secondary
Doug Carnine
Engelmann-Becker Corporation

The 25-lesson keyboarding tutorial program teaches all alphabetic and major punctuation keys, as well as capitals and keys unique to PC keyboards.

Students initially learn proper typing techniques such as posture and appropriate hand placement. As students progress through the program, cumulative review is provided. Actual words, phrases and sentences are used as soon as possible. The initial emphasis is on accuracy, with speed introduced only after the student has demonstrated mastery in keyboard techniques. Students are automatically reinforced for good performance and are provided extra practice as dictated by their individual needs. A record of student performance is kept for each student.

Field testing with third grade students showed that students are able to successfully complete one lesson in approximately a 20 minute period. Students learning keyboarding with the tutorial program demonstrated efficient keyboarding skills as determined by their advancement through the program after reaching a minimum performance criterion. For MS-DOS only; Documentation and 2 disks
$69.00

The Testing Assistant
Grade 6–secondary
Doug Carnine
Engelmann-Becker Corporation

The Testing Assistant allows the teacher to enter answers for simple adaptive level tests, which the computer then administers. This simple adaptive level test tells students which items from the test to answer (the test is in print form, written by the teacher, district or commercial publisher). Students begin with three screening items. If students miss two or three of the items, they are tested more thoroughly. If students miss one or zero items, they skip to the next set of three screening items. The program allows thorough testing at each student's skill level.

Adaptive level testing with the Testing Assistant took, on the average, one minute per student. Conventional testing took, on the average, 27 minutes per student. For MS-DOS Computers; Documentation and one disk
$69.00

DIAL Logical Thinking
Grades 5–post-secondary
Bonnie Grossen and Doug Carnine
Engelmann-Becker Corporation

The program teaches syllogistic reasoning and how to evaluate arguments. A good supplement for the *Reasoning & Writing* program.

Learning disabled high school students who went through the program were able to make syllogistic deductions and critique arguments as well as college students. For MS-DOS only; Documentation and 6 disks
$129.00

Fractions
Grade 5-post-secondary (remedial)
Jerry Silbert and Doug Carnine
Engelmann-Becker Corporation

The program covers almost all fraction skills except word problems, from analyzing pictures of fractions to subtracting mixed numbers with unlike denominators. Explanations and sample problems appear in a self-study textbook. Students work through the 60 lesson program at their own rate. Each lesson quizzes three skills. Students who fail a quiz on a skill are instructed to seek help from the teacher. The student then enters answers to a second quiz on the computer. The computer maintains a complete summary of all missed quizzes for each student.

Research found that percent of instructional interactions between teacher and students doubled because the computer did all the scoring of students' answers and indicated which item they were to work next. For MS-DOS only; Documentation, one disk plus master copy of nonconsumable text of self-study text pages that can be reproduced for each student.
$129.00

Health Ways
Doug Carnine, David Lang, and Linda Wong
Engelmann-Becker Corporation

This unit brings together most aspects of health promotion in an entertaining and challenging game format. After working through a four part tutorial, the player selects from easy, moderate or difficult game, teen games or speed games.

Each game gives a health promotion profile of a character, including information about sex, heredity, disease, nutrition, exercise, smoking, drinking, and lifestyle. The player chooses an aspect of the profile to try and change; but every change has a cost–in will power and stress. The computer evaluates whether the attempted change will take place. As these choices are made the characters become older, the current age approaches an expected age based on the character's profile. If the current age reaches the expected age, the player loses. To win, the player tries to extend the expected age by making "healthy changes." All this time the player must be watching for the effects of too much stress, too little

will power, neglected bad habits and even "wild card" events. Players can also create their own games; if they wish, based on their own health profile. Health Ways has been acclaimed by both educators and students.
For the Apple II Family; 3 disks, teacher's guide
$79.95 *(Specify Apple II Family or IBM-PC.)*

ISSUES AND THEORY

Theory of Instruction
Siegfried Engelmann and Douglas Carnine
ADI

College text and teacher resource. Describes in detail the theory behind the development of direct instruction programs.
Membership Price *$32.00*
List Price *$40.00 plus $4.00 postage and handling*

Higher Order Thinking
Designing Curriculum for Mainstreamed Students
Edited by Douglas Carnine and Edward J. Kameenui, 1992
PRO-ED

Many educators are skeptical about higher order thinking for students with mild disabilities. This book helps dispel that skepticism. Rationale, interventions, and research findings are provided for a variety of subject areas–mathematics, science, social science, spelling–and for a variety of higher order tools–reasoning, problem solving, composition, and comprehension.

These chapters are built around a common theme: Teaching students to understand and apply "big ideas." This theme also has strong implications for reorganizing the general education curriculum and for preservice and inservice teacher training, topics that are addressed by various chapters. This book is intended to be responsive to the educational demands of the 21st Century, to increase the learning and employment options for all students.
$24.00

Legal Issues in School Transportation (Video)
Barbara Bateman
Teaching Strategies, Inc.

A video tape program designed to assist principals, special education directors, central office administrators and transportation supervisors in reducing potential liability and other legal difficulties. Legal issues is a two video tape training program complete with reproducible text.
$199.00

Interventions for Achievement and Behavior Problems
Edited by Gary Stoner, Mark Shinn, and Hill Walker, 1991
NASP

Thirty-four chapters written by the best experts in the country define specific interventions for dealing with a large number of school problems. The interventions are representative of the state-of-the-art, tested practices for schools.
$45.00; $35.00 for NASP members.

BEHAVIOR MANAGEMENT

Managing Acting-Out Behavior (Video)
Geoffrey Colvin
Behavior Associates

The program consists of two videotapes and a manual. The first video presents a model for describing acting-out behavior. The second video provides strategies to deal with acting-out behavior. A graph is used to illustrate the phases of escalating conflict. The seven phases are described in detail. The video will enable the teacher or staff member to place the student in the acting-out sequence. Once the student's behavior is identified, specific strategies are used to manage the behavior at that phase.

The program is designed for staff teams of individual staff working with students who display acting-out behavior. Specifically: regular and special education teachers; administrators; supervisors; support staff; counselors; social workers; paraprofessionals; parents; school psychologists.
$245.00

Structuring Your Classroom for Academic Success
S. Paine, J. Radicchi, L. Rosellini, L. Deutchman, and C. Darch
ADI

Structuring Your Classroom for Academic Success is written for the teacher in training and for teachers who would like more guidance in managing their classrooms successfully. It provides an overview of what teaching is all about—focusing on important management skills every teacher needs and on the details of ensuring that each student has a chance to win in the classroom.
Membership Price *$11.00* List Price *$14.00*

The Solution Book: A Guide to Classroom Discipline
Randall S. Sprick
SRA

Nine booklets and 100 Solution Sheets in a loose-leaf binder provide a ready reference manual on preventing behavior problems in the classroom and dealing with those that occur. Booklets cover general topics such as Setting Goals for Student Behavior, Establishing a Discipline Plan, Improving the Student's Self-Concept, Effective Reinforcement and Effective Punishment, Ignoring Misbehavior, and others. Each of the 100 Solution Sheets takes up a specific problem, such as fighting, talking out, or failure to complete work, and offers a specific solution. A real "how-to" book–not just a theory book,
$63.00

School Bus Discipline (Video)
Randall Sprick and Geoff Colvin
Teaching Strategies, Inc.

A video tape program for administrators, drivers and teachers that will enable staff to effectively manage student bus behavior. The program is comprised of four video tapes and reproducible handouts.
$299.00

Playground Discipline (Video)
Positive Techniques for Recess Supervision
Randall S. Sprick, Ph.D.
Teaching Strategies, Inc.

A video tape training kit for principals, playground supervisors and teachers that will help staff develop strategies to prevent and resolve playground discipline problems. The program contains two video tapes and reproducible handouts.
$249.00

Foundations (Video)
Establishing Positive Discipline Policies
Randall S. Sprick, Ph.D., Marilyn Sprick, M.S., and Mickey Garrison, Ph.D.
Sopris West, Inc.

A video tape program that will guide school staff in a process for writing, revising, implementing and maintaining a school-wide discipline plan. Foundations is a six video tape program complete with multiple copies of the three training manuals.
$850.00

Solutions to Elementary Discipline Problems (Video)
Randall S. Sprick, Ph.D.
Teaching Strategies, Inc.

A video inservice series for administrators and teachers that will provide staff with specific strategies for encouraging student motivation and reducing discipline problems. The solutions kit contains a copy of The Solution Book, five video tapes and a training manual.
$850.00

Solutions to Secondary Discipline Problems (Video)
Randall S. Sprick, Ph.D.
Teaching Strategies, Inc.

A video series for administrators and secondary teachers that can be used to assist them in reducing discipline problems as they teach large numbers of students. The solutions kit contains two copies of Discipline in the Secondary Classroom, five video tapes and a training manual.
$850.00

Discipline in the Secondary Classroom
Randall S. Sprick, Ph.D.
Teaching Strategies, Inc.

This practical book describes troubleshooting techniques you can use immediately to solve behavior problems and build student self-discipline in grades 6-12.
$32.95

Solutions to Classroom Discipline (Audio)
Randall S. Sprick, Ph.D.
Teaching Strategies, Inc.

Audio tapes for teachers and school administrators dealing with specific issues on effective classroom management. The audio tapes are available individually or in convenient kits of ten tapes.
Prices vary from $8.95 for a single tape to $59.95 for a ten tape set.

Goal Setting
Randall S. Sprick, Ph.D.
Teaching Strategies, Inc.

A practical staff development tool teaching two types of goal setting procedures for reducing misbehavior and improving motivation. Staff will learn to identify precise goals and expectations for student behavior.
$145.00

Solving Behavior Problems (Video)
Randall S. Sprick, Ph.D.
Teaching Strategies, Inc.

A video tape program to train staff to follow an effective and efficient step-by-step problem-solving process to resolve challenging behavior problems.

This eight step process can be used with any type of problem.
$145.00

ACCEPTS Program: A Curriculum for Children's Effective Peer and Teacher Skills
Hill Walker, Scott McConnell, Deborah Holmes, Bonnie Todis, Jackie Walker, and Nancy Golden
Pro-Ed

ACCEPTS is a complete curriculum for teaching classroom and peer-to-peer social skills to handicapped and nonhandicapped children in grades K-6. The curriculum, designed for use by regular and special education teachers, cognitively teaches social skills as subject matter content. The program can be taught in one-to-one, small-group, or large-group instructional formats. ACCEPTS includes Classroom skills, Basic interaction skills, Getting along skills, Making friends skills, and Coping skills.
$39.00; videotape $198.00

ACCESS Program: Adolescent Curriculum for Communication and Effective Social Skills
Hill Walker, Bonnie Todis, Deborah Holmes, and Gary Horton.
Pro-Ed

ACCESS is a complete curriculum for teaching effective social skills to students at middle and high school levels. The program teaches peer-to-peer skills, skills for relating to adults, and self-management skills. The ACCESS Curriculum, which is designed for use by both regular and special education tachers, may be taught in one-to-one, small-group, or large-group instruction formats. ACCESS contains Relating to peers, Relating to adults, and Relating to yourself.
$44.00

CLASS: Contingencies for Learning Academic and Social Skills
Hyman Hops and Hill Walker
Sopris West

CLASS was designed to modify the classroom behavior of elementary school children with acting-out behaviors. Based on years of research, CLASS has proven that it works as a preventive program for children who display high rates of acting-out behavior in regular education classrooms and for children who are in special education classrooms. The program, which can be completed in as little as 30 days, uses group consequences in the classroom and individual consequences at home. Teacher training available at the Oregon Conference.
$45.00

RECESS: Reprogramming Environmental Contingencies for Effective Social Skills
Hill Walker, Hyman Hops, and Charles Greenwood
Sopris West

Tired of bullies. Research says that bullies don't change. However, after years of research, RECESS has proven that it can change the bullying behavior of elementary-aged children in playground and classroom settings. RECESS was designed for children in regular or special education classrooms and can be completed in as little as two months. There are four major components to the program: (1) training in appropriate social interactive skills and behavior, (2) adult praise, (3) group and individual reinforcement contingencies, and (4) response cost contingency. The tangible consequences are gradually faded and teacher praise maintains the behavior change. Training offered at The Oregon Conference.
$50.00

BEHAVIOR AND SOCIAL SKILLS ASSESSMENT TOOLS

Systematic Screening for Behavior Disorders
Hill Walker and Herb Severson.
Sopris West

Unique to SSBD is its ability to identify not only students with externalizing problems, but also those with internalizing problems. Of those students often referred for services, a high percentage are those who exhibit externalizing problems—problems that are outwardly directed toward the social environment or problems that involve behavioral excesses aversive to others. Often overlooked are students who exhibit behavior problems of an internalizing nature—behaviors that are typically self-imposed and inwardly directed. Teacher judgment has proven to be highly accurate and cost-effective in determining at-risk students. SSBD systematizes teacher judgment by providing normed critieria for determining severity and content of behavior problems. Teacher judgment in the first two stages of the assessment is then supplemented in the third stage by direct observation of the student in the classroom and on the playground. SSBD allows for early intervention into behavior patterns that can potentially contribute to school failure.
$195.00

School Archival Records Search
Hill Walker
Sopris West

The SARS was designed to overlay existing school records so that they can be coded and quantified systematically. This information provides a student profile on 11 archival variables usually contained in school records. The resulting profile can be used to

meet the PL 94-142 requirement that a student's school history be systematically examined in eligibility decision making processes; as a proactive strategy for determining individual student's at-risk status for later school dropout; and as a fourth stage of screening in conjunction with the Systematic Screening for Behavior Disorders assessment tool.
$35.00

Walker-McConnell Scale of Social Competence and School Adjustment
Hill Walker and Scott McConnell
Sopris West

This is a 43-item teacher rating scale of social skills for students in K-6. The scale yields a total score and subscales that measure teacher-preferred social behavior, peer-preferred social behavior, and school adjustment. The first two scales focus on peer relations and the third scale focuses on adjustments to the behavioral demands of the classroom. You can compare score to national norms.
$49.00

STAFF DEVELOPMENT

For most effective results, you need staff development and training. There are two ways to obtain this training. You may attend one of the ADI-sponsored training workshops. Or you may bring a trainer-consultant to your school. For larger implementations, it is more economical and more effective to provide on-site training.

The costs of on-site training vary. Costs depend on the extent of your implementation and your goals. How many teachers do you want to reach? How many programs are you implementing? What are your other goals? For advice on budgeting call ADI (503-485-1293) and ask for Phyllis Haddox–Budgeting for Implementations. ADI is preparing a directory of skilled consultants and teacher trainers who can offer staff development services for your staff.

Training at a conference workshop: Budget $200 plus travel and lodging.
On-site training: Call ADI for advice

Basic Skills in Teaching–
A Video Training Program for Effective Teaching Skills
ADI

These 3 lessons show skilled teachers demonstrating effective teaching techniques with a variety of students and a range of instructional materials. The lessons are designed for individual use by novices to Direct Instruction, but can be used by supervisors or teacher trainers to illustrate effective use of Direct Instruction techniques. Video examples demonstrate correct and incorrect use of teaching skills with small groups of low-performing students. In the workbook that accompanies the video presentations, the viewer has the opportunity to practice the skills presented. Skills are reviewed cumulatively throughout the lessons.

Lesson 1, Pacing and Signaling (25 minutes)
Presenting scripted material with enthusiasm; moving quickly through lessons to cover more material and maintain student attention; using signals to increase teacher-student interaction rate.
$75.00

Lesson 2, Motivation (30 minutes)
Setting clear behavioral and academic expectations; providing consistent feedback; using group management systems to increase student motivation.
$75.00

Lesson 3, Corrections (30 minutes)
Correcting errors immediately and effectively; using a standardized correction procedure to remediate student errors, regardless of instructional materials.
$75.00

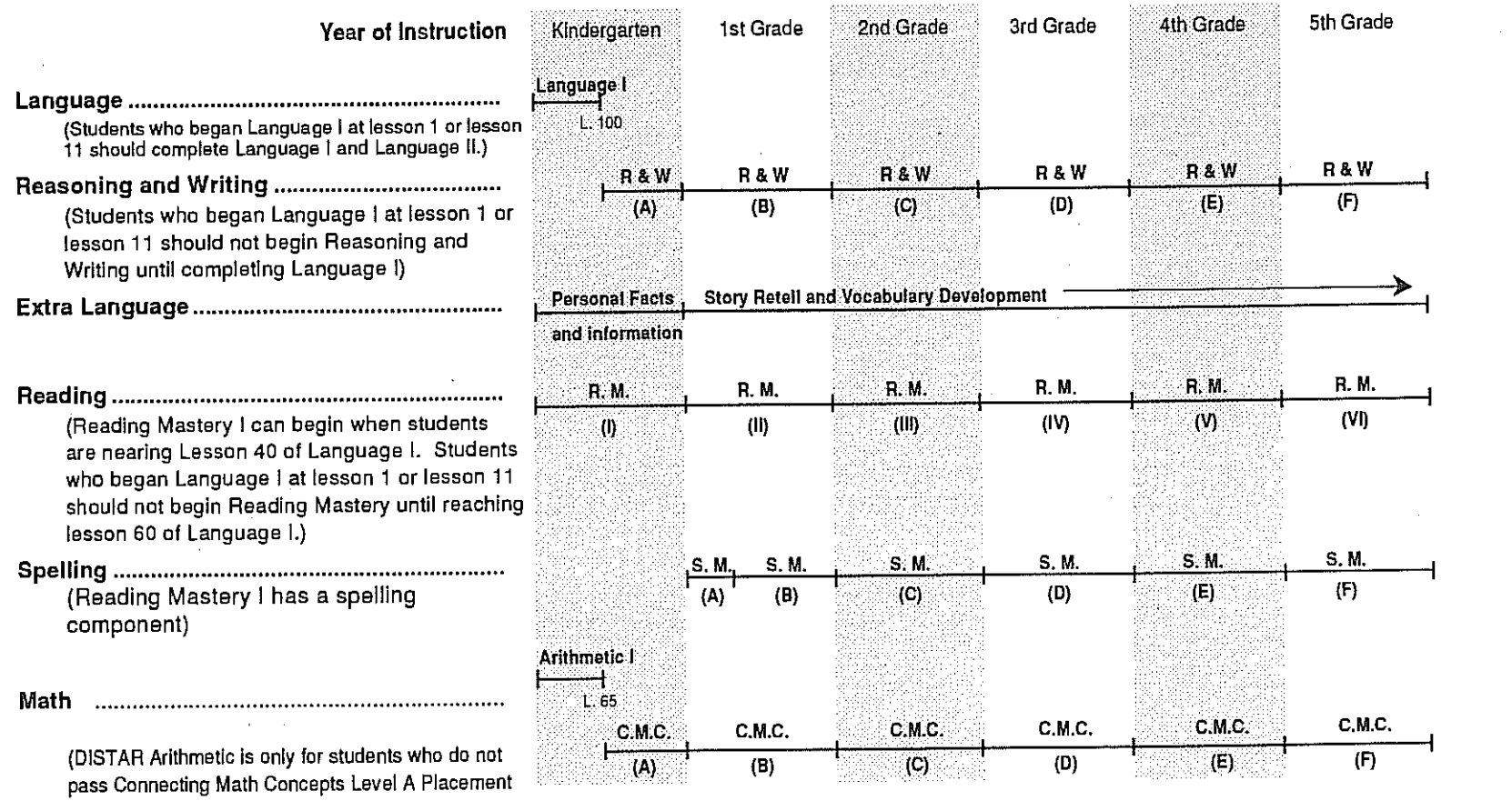
Set of three lessons *$200.00*
Extra workbook *$3.00 ($9.00 for a set of 3)*

Do you have DI skills to offer others?

We are preparing a directory of people prepared to provide staff development to schools implementing DI programs. If you feel you might have skills to offer in training or as a demonstration teacher, please call 503-485-1293 or write and ask for the Technical Assistance Survey.

Direct Instruction Developmental Sequence

(This sequence assumes that students begin the Direct Instruction curriculum in Kindergarten. If this is not the case, the programs used in a given grade level will depend on students' skill level.)



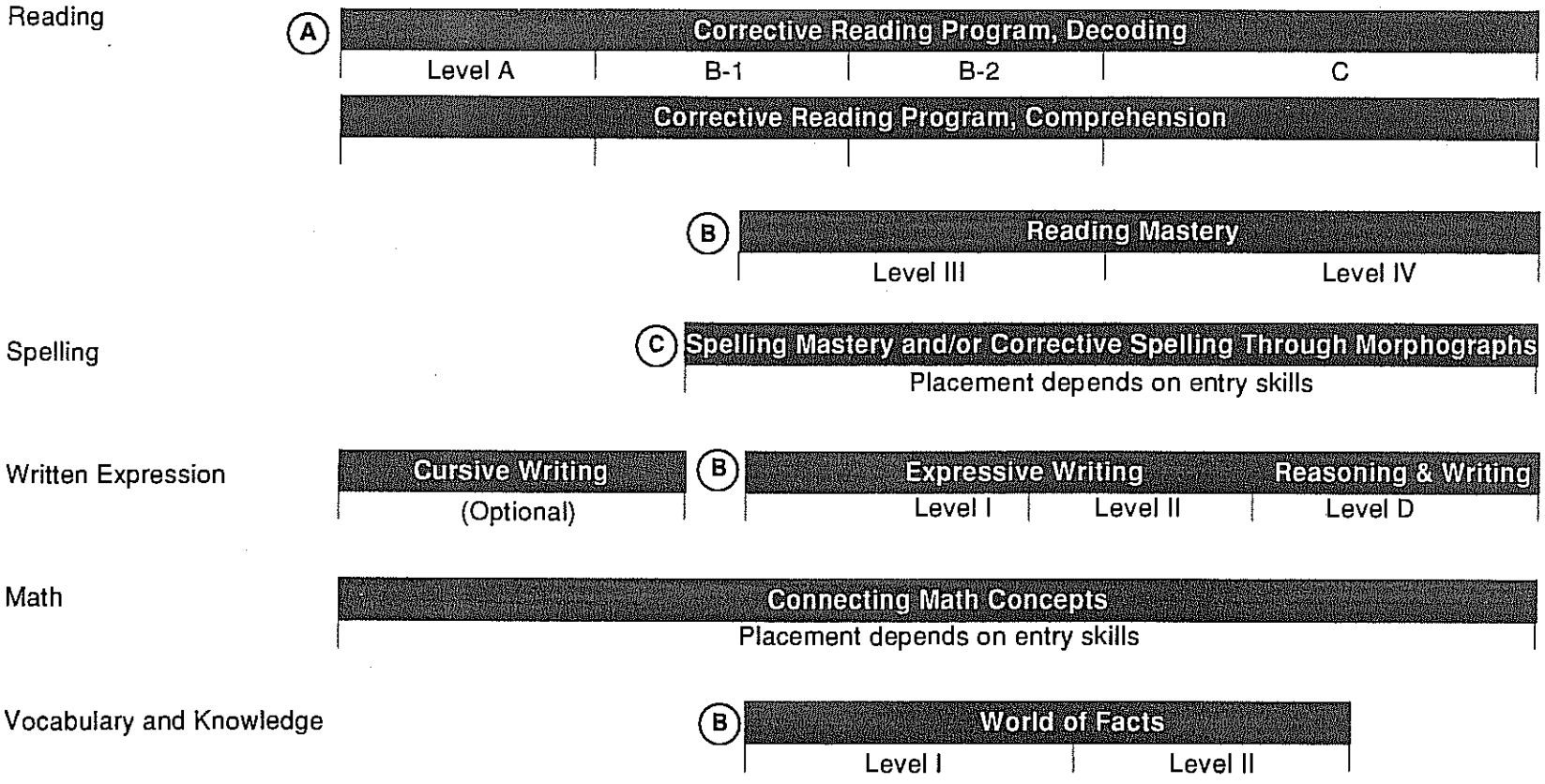
R & W = Reasoning & Writing R.M. = Reading Mastery S.M. = Spelling Mastery C.M.C. = Connecting Math Concepts

Note: • Students who place at Lesson 41 on DISTAR Lanaguage I placement test and at Fast Cycle I on the Reading Mastery Placement test would be placed in Reading Mastery–Fast cycle. They could cover the first two years content in Reading Mastery, Language, Reasoning and Writing, and Spelling in one year.

• Limited English speaking students should receive a wide range of langauge development exercises in kindergarten. Students should not begin Reasoning and Writing until they have conversational skills in English.

Direct Instruction Remedial Sequence

(Grade 4 through High School)



(A) Placement in C.R.P. Decoding and Comprehension is dependent on separate placement tests.

(B) Programs that can begin when students have completed lesson 50 of C.R.P. Decoding B-1.

(C) Suggested spelling sequence: 1)Spelling Mastery B; 2) Corrective Spelling Through Morphographs; 3) Spelling Mastery E; 4) Spelling Mastery F. Spelling Mastery B can begin when students have completed lesson 30 of C.R.P. Decoding B-1.

PUBLISHER/SOURCE LIST

Association for Direct Instruction (ADI)
P.O. Box 10252
Eugene, OR 97440
Phone: (503) 485-1293
FAX: (503) 683-7543

Behavior Associates
P.O. Box 5633
97405-0633
Order Toll Free: 1-800-241-2888
Phone: (503) 485-6450
FAX: (503) 683-7543

BFA Educational Media
468 Park Avenue South
New York, NY 10016
Order Toll Free: 1-800-221-1274
Phone: (212)684-5910

Curriculum Associates, Inc.
5 Esquire Road
North Billerica, MA 01862-2589
Order Toll Free: 1-800-225-0248
Phone: (508) 667-8000
FAX: (508) 667-5706

Engelmann-Becker Corporation
P.O. Box
Eugene, OR 97402
Phone: (503) 485-1163

National Association of School Psychologists
Department 5128
Washington, DC 20061-5128
Phone: (301) 608-0500
FAX: (301) 608-2514

PRO-ED
8700 Shoal Creek Boulevard
Austin, TX 78758-9965
Phone: (512) 451-3246
FAX: (512) 451-8542

Science Research Associates (SRA)
Order Toll Free: 1-800-843-8855
Customer Service: 1-800-527-7724

Sopris West
P.O. Box 1809
Longmont, CO 80502-1809
(303) 651-2829

Teaching Strategies, Incorporated
P.O. Box 5205
Eugene, OR 97405
Order Toll Free: 1-800-323-8819
Phone: (503) 345-1442
FAX: (503) 345-6431

ADI Conference and Workshop Calendar

Oregon Conference	Eugene, Oregon	February 5-6, 1993
Behavior Institute	Eugene, Oregon	June 17-18, 1993
Hill Walker, Geoff Colvin, Randy Sprick, George Sugai		
Atlantic Coast ADI Conference	Rehoboth Beach, Delaware	July 19-22, 1993
Eugene ADI Conference		July 26-30, 1993

Budget $200 plus travel and lodging for a conference.

HOW TO SOLICIT FUNDING FROM DONORS

The following section includes procedures for identifying possible sources for funding and a model proposal. The model proposal was successful in obtaining funding from local businesses to support the purchase of the Direct Instruction videodisc programs in two school districts. You can adapt it for your situation and for the use of other DI programs.

As a rule, the best sources for funding seem to be larger businesses within your district boundaries. Personalized appeals seem to work best. The proposal could also be used for many special state grants and foundation grants. The *Foundation Directory* can be found in most libraries. You can use that directory to find the contact addresses for businesses that are currently funding education projects in your state. There are also a number of databases that can search a huge list of foundations funding educational projects. Call your nearest University for more information about such a database.

The corporations below were selected through a SPIN (name of a database in Albany, NY, 518-464-0691) search. These corporations generally specify that they support educational projects for promoting math and science education in communities in which their corporation facilities are located. Generally, you should write or call for specific guidelines before you submit your proposal.

PROPOSAL CHECKLIST

Does your proposal...

- highlight clear and relevant goals?
- use phrases and ideas from the guidelines or mission statement of the specific foundation?
- define a need or a problem that is easily understood?
- present a clear but concise plan for change?
- make a strong case for the success of the planned change? (Use the index and review article to find references and information.)
- make key ideas clear at a glance?
- state clearly for the donor what the expenditure will achieve?
- describe how the expected achievement will be evaluated?

Is your proposal...

- brief?
- attractive?
- simple but persuasive?
- easy to speed-read?

FOUNDATIONS THAT SUPPORT EDUCATION

Obtain guidelines for proposals before preparing proposal

Amoco Foundation, Inc.
200 East Randolph Drive
Chicago, IL 60601
(312) 856-6306

Babcock (Mary Reynolds) Foundation
102 Reynolds Village
Winston Salem, NC 27106
(919) 748-9222

Bush Foundation
E-900 First National Bank Building
332 Minnesota Street
St. Paul, MN 55101
(612) 227-0891

Carnegie Corporation of New York
437 Madison Avenue
New York, NY 10022
(212) 371-3200

Champion International Corporation
Maris Vanasse, Director
Contributions and Community Support Pgms
One Champion Plaza
Stamford, CT 06921
(203) 358-7361

Corning Incorporated Foundation
President
MP-LB-01-1
Corning, NY 14831
(607) 974-8489

Department of Education
Shirley Steele
Fund for the Improvement and Reform
of Schools and Teaching
555 New Jersey Avenue, NW, Room 522
Washington, DC 20208
(202) 219-1496

Fikes (Leland) Foundation
Nancy Solana, Secretary
3050 Lincoln Plaza
500 North Akard
Dallas, TX 75201
(214) 754-0144

Greenwall Foundation
370 Lexington Avenue
New York, NY 10017
(212) 661-0831

Hillman Foundation, Inc.
Ronald W. Wertz, Executive Director
2000 Grant Building
Pittsburgh, PA 15219
(412) 338-3466

MacArthur (John D. and Catherine) Fndn.
140 South Dearborn Street
Chicago, IL 60603
(312) 726-8000

Metropolitan Life Foundation
Sibyl Jacobson, President
One Madison Avenue
New York, NY 10010
(212) 578-6272

National Science Foundation
Directorate for Education and Human Res.
Div. of Teacher Preparation and
Enhancement
1800 G Street N.W.
Washington, DC 20550
(202) 357-7539

Prudential Foundation
751 Broad Street
15th Floor
Newark, NJ 07102
(201) 802-7354

RGK Foundation
President
2815 San Gabriel
Austin, TX 78705
(512) 474-9298

Wallace (DeWitt) Reader's Digest Fund
Program Director
261 Madison Avenue
24th Floor
New York, NY 10016
(212) 953-1201

Using Videodisc Technology to Achieve Outstanding Math Performance

A. Grade levels involved: 6-8

B. The project goals:

1) To help at-risk students not only survive in school, but thrive, by using a math curriculum that incorporates features of instruction that have been shown to maximize their learning.

2) To also raise the academic math levels of high performing students instructed in the same classroom environment to meet world class standards.

   a) by using a curriculum that reconceptualized the nature of knowledge and restructures its presentation,

   b) using videodisc technology to convey that reconceptualization to both students and teachers,

   c) training teachers to implement the curriculum using guidelines established through research with highly successful implementations.

C. Project objectives and activities

Project objectives	Project activities
1. Grade 6, 7, & 8 implement **Mastering Fractions** videodisc curriculum (35 lessons) according to guidelines. (September, 1993)	1. Inservice training and coaching by consultant from the videodisc research and development team.
2. Grade 6, 7, & 8 implement **Mastering Decimals and Percents** (15 lessons) according to guidelines in December, 1993.	2. Implementation fidelity check by principal.
3. Grade 6, 7, & 8 pupils demonstrate mastery of fractions, decimals, and percents. (February, 1994)	3. Testing.
4. Grade 6, 7, & 8 teachers implement **Mastering Equations** according to guidelines. (March, 1994)	4. Inservice training and coaching by consultant.
5. Grade 7 & 8 teachers implement **Mastering Ratios and Word Problem Strategies** (40 lessons). (September, 1994)	5. Implementation fidelity check and coaching as necessary by consultant.
6. Grade 7 & 8 pupils demonstrate mastery of ratios and work problem strategies. (January, 1995)	6. Testing.
7. Grade 7 & 8 teachers implement **Mastering Informal Geometry** (35 lessons) so that pupils demonstrate mastery. (February, 1995–April, 1995)	7. Inservice training and coaching by consultant.
8. Final evaluation.	8. Data analysis.

D. The instructional change involved:

Implementing the Systems Impact© videodisc math programs represents more than simple an innovative use of technology in the classroom. More importantly, the design of the instruction provides an opportunity for solutions to several school problems. First, these programs provide a solution to the problem of communicating sufficient knowledge to students so that they can successfully perform higher level thinking operations. This communication is facilitated by a wholesale reconceptualization of the nature of knowledge. Rather than simply changing the approach to knowledge, for example, from teacher-centered to student-centered, as many curricula do, the videodisc curricula conceptualize knowledge as a cohesive network of underlying strategies and concepts with high utility. By continuously applying these strategies and principles in solving problems that are presented via dynamic video, pupils deepen their understanding of mathematics.

For example, students learn to set up a ratio for problems such as: If 30% of a number is 8, what percent of that number is 5? The table would look like this:

$$\frac{\%}{30\%} = \frac{\#}{\frac{5}{8}}$$

The same basic strategy is developed into a table that allows the ratio strategy to apply to a wider range of problems involving multiplication and division, including discount problems, percent problems, and difficult increase or decrease problems such as the following:

Discount

An item is discounted 20%. The sale price is $7.50. How much was the regular price?

	%	#
regular	**100%**	☐
sale	***80%***	**$7.50**
discount	**20%**	

Increase

Pierre's original investment was $500. The investment is now worth $750. What is the percent gain on the investment?

	%	$
original	**100%**	**$500**
increase	☐	***$250***
final		**$750**

Secondly, these programs also provide a means for teaching sophisticated higher-order thinking skills to students of wide-ranging ability in the same classroom environment. Organizing the content in "strands," where topics overlap across several lessons until they are integrated into more complex skills, and incorporating other innovative features that provide both for more practice and more new learning, facilitates this integration of ability levels. Students with wide-ranging abilities (learning disabled and at-risk students, regular students, and disadvantaged gifted students) have significantly improved their performance solving higher-order mathematical problems after instruction that used the videodiscs. A longer-term study evaluated the performance of a heterogeneous class of regular 5th grade students taught using the videodisc curriculum. The performance of the lower half of the class learning from the videodisc programs far exceeded that of the upper half of the class learning from the newly adopted 1991 basal math program. (See Figure 1.)

The videodisc technology is important as a delivery medium because training teachers to implement the wholesale reorganization and restructuring of the content into underlying linkages without videodisc delivery would require lengthy inservice time. By using the videodisc technology as a delivery system, teachers are not required to be

entirely proficient in the content themselves before implementing. By relying on the videodisc as the delivery medium, the teacher is free to monitor and interact with students as they work through the sequence of activities.

E. Evaluation

The performance of high and low performing 6th-, 7th-, and 8th-grade students (1994) receiving the videodisc math curriculum will be compared with the performance of high and low performing 6th, 7th and 8th graders who did not use the videodisc. These comparison groups (non-videodisc-users) would consist of the previous

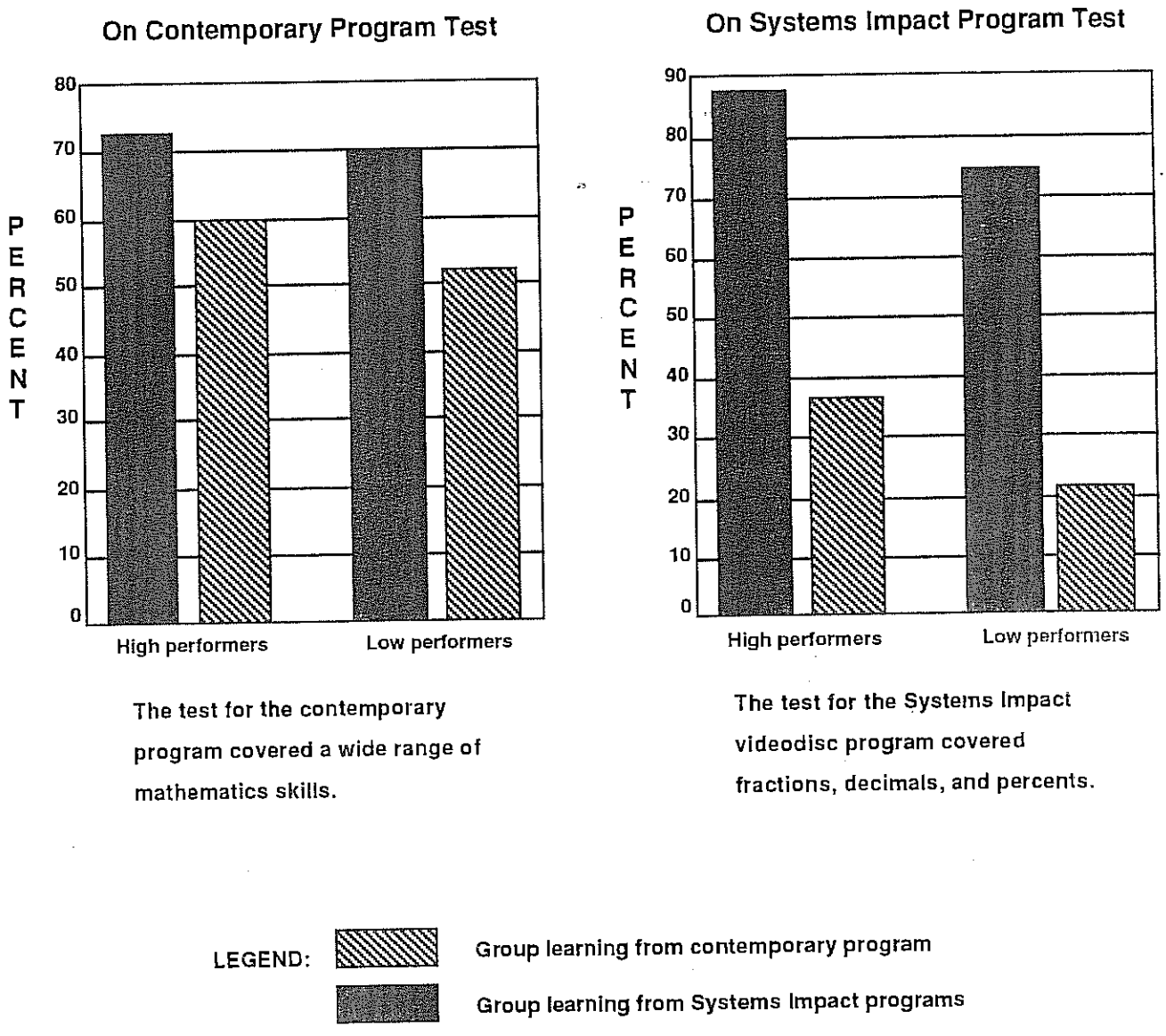


Figure 1. Performance on Grade 5 Year-End Test

6th-, 7th-, and 8th-grade class (1993) and 6th, 7th, and 8th graders in another school. Criterion-referenced tests of fractions, decimals, word problems, pre-algebra, and informal geometry along with standardized achievement measures and Junior High School placement examinations will be used to make these comparisons.

The 7th- and 8th-grade classes of the following year (1995) will be compared in the same way. The 7th- and 8th-grade class of 1995 would have begun using the videodisc curriculum already in the previous grade and would have experience more learning through the videodiscs. By comparing the 1995 7th grade with the previous 7th grade (1994), who experience less videodisc learning, and with the current 7th grade (1993), who experienced no videodisc learning, the cumulative impact of the implementation can be evaluated.

Our projections are as follows:

1. *Low performing pupils will improve.*

1a. The lower half of the 1994 6th-, 7th-, and 8th-grade (the at-risk and handicapped students) will perform significantly better than the upper half of the 1993 8th grade (receiving no videodisc curriculum) on tests of mathematics problem solving.

1b. A significant number of students scoring well-below average in mathematics before videodisc instruction will no longer score below average when compared to national and city norms, that is, they will no longer be "at-risk," at least in mathematics.

1c. Mainstreamed special education students, who qualified for videodisc instruction because they had the prerequisite skills, will complete the programs successfully in the regular classroom environment.

2. *High performing pupils will improve.*

2a. The upper half of the 1994 6th, 7th, and 8th grade (including gifted students) will also perform significantly better than the upper half of the 1993 corresponding grade on tests of mathematics problem solving.

2b. Significantly more students who receive videodisc instruction will qualify for advanced mathematics in the High School in 1995.

3. *World-class standards will be achieved.*

3a. The 8th grade of 1995, having received more extensive videodisc instruction, will demonstrate even greater gains than the class of 1994 in all of the above comparisons.

3b. The 8th grade of 1995 will exceed national norms by a wide margin and compare favorable with children having 8 years of education from the highest performing nations in the world.

F. Budget

(For one school site)

One 14-disc videodisc program series (*Mastering Fractions; Mastering Decimals and Percents; Mastering Ratios and Word Problem Strategies; Mastering Equations, Roots, and Exponents; Mastering Informal Geometry*) with Level 1 videodisc player.	9,450.00
100 workbooks for each program (5) @ 3.25	1,625.00
1-27" monitor	700.00
1 cart	150.00
Total	11,925.00
Additional monitor, videodisc player, cart *(optional)*	1,500.00
New total	13,425.00

G. Abstract (summary) of the project

The purpose of the project is to bring the mathematics performance of 8th grade graduates to meet or exceed world class standards. The curriculum begins by assuming a mastery of whole number operations, takes the learner through fractions, decimals and percents, and ratio word problems. Students who begin the curriculum in fifth grade will learn pre-algebra, and informal geometry in the sixth grade. The videodisc curriculum is unique, not so much because of the technology, but more because of its instructional efficiency. It achieves this efficiency by reconceptualizing mathematics knowledge as a network of highly related strategies and schemas, and teaching the application of that knowledge using an innovative strand design, where several strategies and concepts are developed simultaneously over time, then integrated into more complex skills. This unique strand design makes the curriculum suitable for a wide range of abilities.

Earlier research (see references) has found that these programs resulted in significant improvements in mathematics problem-solving performance for learners of a wide range of abilities. Because the use of the videodisc technology is very straight forward, these results should be easily replicable in other settings.

Bibliography of Videodisc Research

Gersten, R., Kelly, B., & Blake, G. (1991). Coaching teachers in the effective implementation of videodisc instruction: Four case studies. Unpublished manuscript. Eugene, OR: University of Oregon.

Grossen, B., Carnine, D., Niedelman, M., & Miller, S. (1992). The effect of integrating deductive content instruction and inductive problem-solving instruction. Unpublished manuscript. Eugene, OR: University of Oregon.

Hasselbring, T., Sherwood, R., Bransford, J., Fleenor, K., Griffith, D., & Goin, L. (1987-88). An evaluation of a level-one instructional videodisc program. *Journal of Educational Technology Systems, 16* (2), 151-169.

Hofmeister, A., Engelmann, S., & Carnine, D. (1989). Developing and validating science education videodiscs. *Journal of Research in Science Teaching, 26* (7).

Kelly, B., Carnine, D., Gersten, R., & Grossen, B. (1990). student error patterns as a function of instructional design: Teaching fractions to remedial high school students and high school students with learning disabilities. *Journal of Learning Disabilities, 23* (1), 23-29.

Moore, L., & Carnine, D. (1989). Evaluating curriculum design in the context of active teaching. *Remedial and Special Education, 10*, 28-37.

Muthukrishna, A., Carnine, D., Grossen, B., & Miller, S. (in press). Children's alternate frameworks: Should they be directly addressed in science instruction? *Journal of Research in Science Teaching.*

Niedelman, M. (1992). Problem solving and transfer. In D. Carnine & E. Kameenui (Eds.), *Higher order thinking: Designing curriculum for mainstreamed students* (pp. 137-156). Austin, TX: Pro-Ed.

Woodward, J. (1989). *Developing schema in earth science.* Technical report, 89-3. Eugene, OR: University of Oregon.

Woodward, J. (in press). Effects of curriculum discourse style on eighth graders' recall and problem solving in earth science. *Elementary School Journal.*

Direct Instruction to Accelerate Cognitive Growth

Douglas Carnine
Bonnie Grossen
Jerry Silbert

Abstract: The analysis of the curriculum distinguishes Direct Instruction for traditional teaching methods that are often referred to as "direct." Examples of this analysis in the subject areas of history and mathematics illustrate how DI teaches the underlying order of knowledge. The research results from project Follow Through are summarized, both the original research findings and the results of a number of related studies. Finally, the future of DI in the larger context of education in America is discussed.

Most educators associate higher cognitive functioning with the "student-dominance" end of the teacher dominance/student dominance continuum. The National Council of Teachers of Mathematics Teaching Standards (1991) describes the student dominance approach this way: "Learners construct their own meaning by connecting new information and concepts to what they already know, building hierarchies of understanding through the processes of assimilation and accommodation" (p. 144). The problem for teachers is that students vary tremendously in what they know (i.e., background knowledge they bring to school) and how that knowledge develops from year to year.

Low-income, at-risk students enter school with less academically-relevant background knowledge than other students. This gap is seldom closed during formal schooling, because the education at-risk students receive tends to lack intensity. For example, Rich and Ross (1989) found that at-risk students are engaged in academic activities for a little over 300 hours in an entire school year.

Although Direct Instruction's teaching techniques cause it to be classified as a teacher-dominant approach, it is very different from other teacher-dominant approaches. Most teacher-dominant approaches are based on textbooks that present a barrage of ideas in such a disorganized fashion that students are likely to rely on strategies that emphasize rote memorization rather than rely on strategies that foster understanding (Tyson & Woodward, 1989).

What is Direct Instruction?

Direct Instruction is an intensive intervention designed to increase not only the amount of learning but also its quality by systematically developing important background knowledge and explicitly applying it and linking it to new knowledge. Direct Instruction designs activities that carefully control the background knowledge that is required so that all students can "build hierarchies of understanding," not just those students who come to school with the appropriate background knowledge. In this process, mechanistic skills evolve into flexible strategies, concepts combine into schemata, and success in highly structured situations develops into successful performance in naturalistic, unpredictable, complex environments.

The Direct Instruction Model grew out of Siegfried Engelmann and Carl Bereiter's research on teaching at-risk preschoolers beginning in the mid-1960s (1966). They recognized that closing the educational gap faced by at-risk students required accelerating their cognitive growth in the context of restricted background knowledge. The model that evolved was designed to be effective, efficient, and manageable for elementary teachers to implement. It consisted of curricular materials, teaching techniques, staff development procedures, and a system for monitoring student progress (see Carnine, Granzin, & Becker, 1988, for more information on these components).

The success of the Model with at-risk first, second, and third grade students is well documented, not only in terms of student achievement in basic and cognitive skills, but also in student self concept and self esteem, and in parental approval (Abt Associates, 1977; Haney, 1977). **At the heart of Direct Instruction is a highly sophisticated analysis of the curriculum.** Unfortunately, the educational community has focused almost entirely on the teaching techniques, e.g., frequent questions with specific, constructive feedback offered by the teacher. However, effective teaching practices cannot be understood without reference to a curriculum. Effective teaching of a rote learning curriculum can effectively produce rote learning. In a study on water-jar prob-

In press. In J. Block, T. Guskey, & S. Everson (Eds.), *Choosing research-based school improvement innovations.* New York: Scholastic.

lem solving by McDaniel and Schlager (1990), students in an explicit teaching condition learned a rote formula (+1 –2 +1), which did not transfer well in solving other water-jar problems. Quite often in research explicit instruction is applied to content that has **not** been designed to be generalizable, such as McDaniel and Schlager's (1990) formula of +1 –2 +1. These interventions should be called explicit rote teaching. The flaw, however, is in the design of the curriculum, not the explicit teaching technique.

The design of curriculum—the analysis and reorganization of the content of the curriculum—is the central aspect of the Direct Instruction Model and has become increasingly important as the educational perspective has changed from national to international, leading policymakers to emphasize higher cognitive functioning for all students. Continuing in its tradition of concern for the welfare of at-risk students, the Direct Instruction development team (DI) has turned its attention to teaching complex higher cognitive functioning. Direct Instruction interventions have successfully taught at-risk students a variety of higher-level subjects: literary analysis, chemistry, earth science, legal reasoning, problem solving, critical thinking, ratio and proportions, social studies, syllogistic reasoning, and metacognition (see Carnine & Kameenui, 1992, for a discussion of much of the research conducted on these interventions).

How Does DI Work—Analyzing the Curriculum

As others have noted (Bruner, 1960; Flavell, 1971; Polya, 1973; Prawat, 1989), instruction that results in higher cognitive functioning must emphasize the organization of knowledge and important connections to other knowledge. The core of Direct Instruction curriculum design is to meaningfully communicate those connections—the underlying schemata of science, mathematics problem solving, history, even art and the underlying tools of discovery. When Direct Instruction explicitly teaches these underlying schemata, it provides the background knowledge essential for all students to successfully engage in sophisticated problem solving and critical thinking activities.

Why is teaching these underlying schemata so important? First, students can explain and predict, rather than just memorize information. Second, the schemata are widely applicable, making them useful in a variety of problem solving and other higher-order activities. These advantages can best be understood through two examples, which constitute the bulk of this chapter. The first example illustrates how a schema can be widely applied in a less-structured domain—history, making the content meaningful, and building a foundation for relating history to current events. The second example is from a more-structured domain—mathematics. A schema for number relations is taught, which then serves as background knowledge for more complex schemata. By building on familiar schemata, students are not overwhelmed with too much new material at one time and are shown how new knowledge relates to background knowledge.

As you read these examples, consider the unique contribution of DI—it is neither a traditional teacher-dominant approach (not a basal hodgepodge of facts, ideas, and activities) nor a student-centered approach, where students would somehow be expected to discover these schemata and learn how they apply. The Direct Instruction Model offers a considerate alternative, a middle road.

History—a less-structured domain. The long strings of dates and events in textbooks usually obfuscates the major concepts of history. For example, the traditional approach to teaching the causes of the Revolutionary War relates a series of acts imposed on the colonies by the British (e.g., the Wool Act, the Hat Act, the Iron Act, the Navigation Acts, the Sugar Act, the Stamp Act, etc.). In contrast, a DI analysis would focus on the predominant pattern in history—people are primarily reactive, coming up with solutions that have effects that lead to further problems, a problem-solution-effect pattern. For example, the way in which England solved some of its economic problems in the mid-1700s led to other problems, such as the American Revolution. During the mid-1700s, England needed to import raw materials for industries that often did not show a profit; moreover, the English government had debts from the French and Indian War. England's solution to these economic problems was to pass a number of revenue-producing laws that required the colonists to buy manufactured goods from England, sell raw materials only to England, and to pay taxes on many items brought into the colonies. The effects of these laws were that the colonists smuggled goods in and out of the country and boycotted the purchase of some English goods, thus producing the conflict that eventually led to war.

The problem-solution-effect schema also is useful in teaching multiple perspectives. For example, England's solution to its economic problems were actually problems for the colonies. With multiple perspectives, students learn that certain events represent a solution for one group, while at the same time being a problem for another group.

Most problems of history are similar in that they involve economics, though religious freedom or human rights are also causes. The solutions can also be limited to several categories: fighting, moving, inventing, accommodating, or tolerating. **The limited number of causes and solutions make it possible to teach all students the problem-solution pattern in history background knowledge and then guide them in applying it,** as Kinder and Bursuck (1991) point out.

Consider the invention of the cotton gin. Generally, the isolated fact that Eli Whitney invented the cotton gin is taught; however, the need for the cotton gin at that time and the historical effects of that invention usually are not made clear. The problem-solution-effect analysis shows these causal connections. Unlike the cotton grown in Egypt, most of the cotton grown in the southern United States was short-staple cotton. The short fibers made it difficult and expensive to remove the seeds—another economically based problem. The solution was Eli Whitney's machine that removed the seeds. The effect was that much more cotton could be cleaned in a day, farmers could sell more cotton, and they were in turn motivated to grow more cotton, which ultimately increased the need for slaves (p. 273).

Looking at the bigger picture of history, there are also significant shifts in the patterns of human response to problems. For example, most history books present a list of new discoveries made during the Enlightenment without indicating clearly that this type of problem solving was a rather sudden shift, from when humans relied more on worship and religious faith as a solution. **In contrast, DI analysis would emphasize the importance of shifts in the basic underlying beliefs of humans, which guide their choice of solutions.** In this case, the faith of humanity was severely shaken by the discovery that the Earth orbited around the sun rather than being positioned in the center of the universe and, therefore, possibly was not the center of God's attention and personal engagement. Rather than rely entirely on God, humans began to rely more on themselves to solve their problems.

Math problem solving—a structured domain. In the history analysis, students are taught the essential background knowledge—the problem-solution-effect pattern and the most common causes of problems and types of solutions. Students then apply this background knowledge to a wide range of historical events. In contrast, in mathematics, students do not apply the same schema in a broad fashion. Instead, they learn to extend their background knowledge of a familiar strategy so that it can accommodate new types of problems. The following example illustrates how the simple concept of a number line has been extended to produce related strategies for solving probability, ratio, and function problems in a Direct Instruction mathematics program (Engelmann & Carnine, 1991a).

Building on the number-line concept, the concept of number families is taught. In a number family, the sum of the numbers on top of the arrow equals the "big" number to the right of the arrow: $\overset{1 \quad 5}{\longrightarrow} 6$. This family links statements of addition to each other and to subtraction:

$1 + 5 = 6 \qquad 6 - 5 = 1$

$5 + 1 = 6 \qquad 6 - 1 = 5$

Fifty-five of these families lead to all 200 addition and subtraction facts.

Number families also link more difficult addition and subtraction problems. Missing numbers are found using either addition or subtraction, depending on the location of the missing number: If a "small" number is missing, one must subtract; in $\overset{31 \quad h}{\longrightarrow} 46$, a small number is missing: $46 - 31 = 15$. If the "big" number is missing, one must add; in $\overset{31 \quad 15}{\longrightarrow} h$, the "big" number is missing: $31 + 15 = 46$.

These problem solving properties then serve as background knowledge for solving simple verbal problems (see Table 1). Students extract information from the problem and place the values on a number-family arrow, a form of mapping. The following self-talk would be used to solve problem 1 in Table 1: "The first sentence, 'Juan had 16 more stamps than Frank had,' indicates that the problem tells about a difference. The difference is always a small number. 16 is the difference. I write 16 first on the arrow. The person or thing with more is the big number; that name goes at the end of the arrow. Juan has more, so I write Juan at the end of the arrow. Frank has to be the other small number." This is the result of the analysis to this point:

$$\overset{16 \quad \text{Frank}}{\longrightarrow} \text{Juan}$$

The self-talk continues: "The problem tells me that Juan had 28 stamps, so I cross out Juan and write 28; $\overset{16 \quad \text{Frank} \quad 28}{\longrightarrow}$ ~~Juan.~~ Now I have one missing number, Frank. Frank is a small number, so I subtract to find the value for Frank... $28 - 16 = 12$. Frank had 12 stamps." Students learn to use the same strategy to solve the other comparison problems in Table 1. Regardless of which values are missing or whether the problem states who had more or who had fewer, the same strategy works.

With this strategy as background knowledge, students are then taught slight variations for temporal sequence and classification problems. Once students set up the number family, they insert the numbers they know and then solve the problem (see Table 1). For example, to solve classification problems (e.g., problem 9 in Table 1) students identify the subsets (trucks and other vehicles) of the larger set (total vehicles) and then write 12 for trucks and 86 for total vehicles. Because the "big number" is given, the students subtract: 86 – 12. There were 74 other vehicles on the ferry.

The strategy for solving classification problems then serves as background knowledge for solving data-analysis problems, such as this one:

The ferry company wants to know how many trucks and other vehicles use the morning and afternoon ferry. The ticket-taker has receipts for 226 vehicles on the morning ferry and 160 on the afternoon ferry. Because of a special tax on trucks, the ticket-taker knows that 38 trucks were on the morning ferry and 81 were on the afternoon ferry.

Having learned how to map a single classification problem, students learn that they can think of data analysis problems as classification maps stacked one on top of the other (the rows) and as classification problems lined up side by side (the columns):

	Trucks	Other Vehicles	Total Vehicles
Morning ferry	38	a.	226
Afternoon ferry	81	b.	160
Total for the day	c.	d.	e.

The units for the classification problem across the top are trucks, other vehicles, and total vehicles. The units for the classification problem along the side are morning ferry, afternoon ferry, and total for the day.

Table 1. Problem Types Solved Using Simple Number Families

Comparison Problems:

1. Juan had 16 more stamps than Frank had. Juan had 28 stamps. How many did Frank have?

16 Frank 28
——————> ~~Juan~~

2. Frank had 16 fewer stamps than Juan had. Juan had 28 stamps. How many did Frank have?

16 Frank 28
——————> ~~Juan~~

3. Juan had 16 more stamps than Frank had. Frank had 12 stamps. How many did Juan have?

12
16 ~~Frank~~
——————> Juan

4. Frank had 16 fewer stamps than Juan had. Frank had 12 stamps. How many did Juan have?

12
16 ~~Frank~~
——————> Juan

Temporal Sequence Problems:

5. Tina had some berries. She gave away 40 berries. She ended up with 312 berries. How many did she start out with?

312 40
~~End with~~ ~~Lose~~
——————————> Start with

6. Tina had some berries. Then she picked 40 berries more. She ended up with 352 berries. How many did she start out with?

40
Start with ~~Get~~ 352
——————————> ~~End with~~

7. Tina had 352 berries. She gave away some. She ended up with 312 berries. How many did she give away?

312
~~End with~~ Lose 352
——————————> ~~Start with~~

8. Tina had 352 berries. She picked 40 berries more. How many did she end up with?

352 40
~~Start with~~ ~~Get~~
——————————> End with

Classification Problems:

9. There were 86 vehicles on a ferry. 12 of the vehicles were trucks. How many other vehicles were on the ferry?

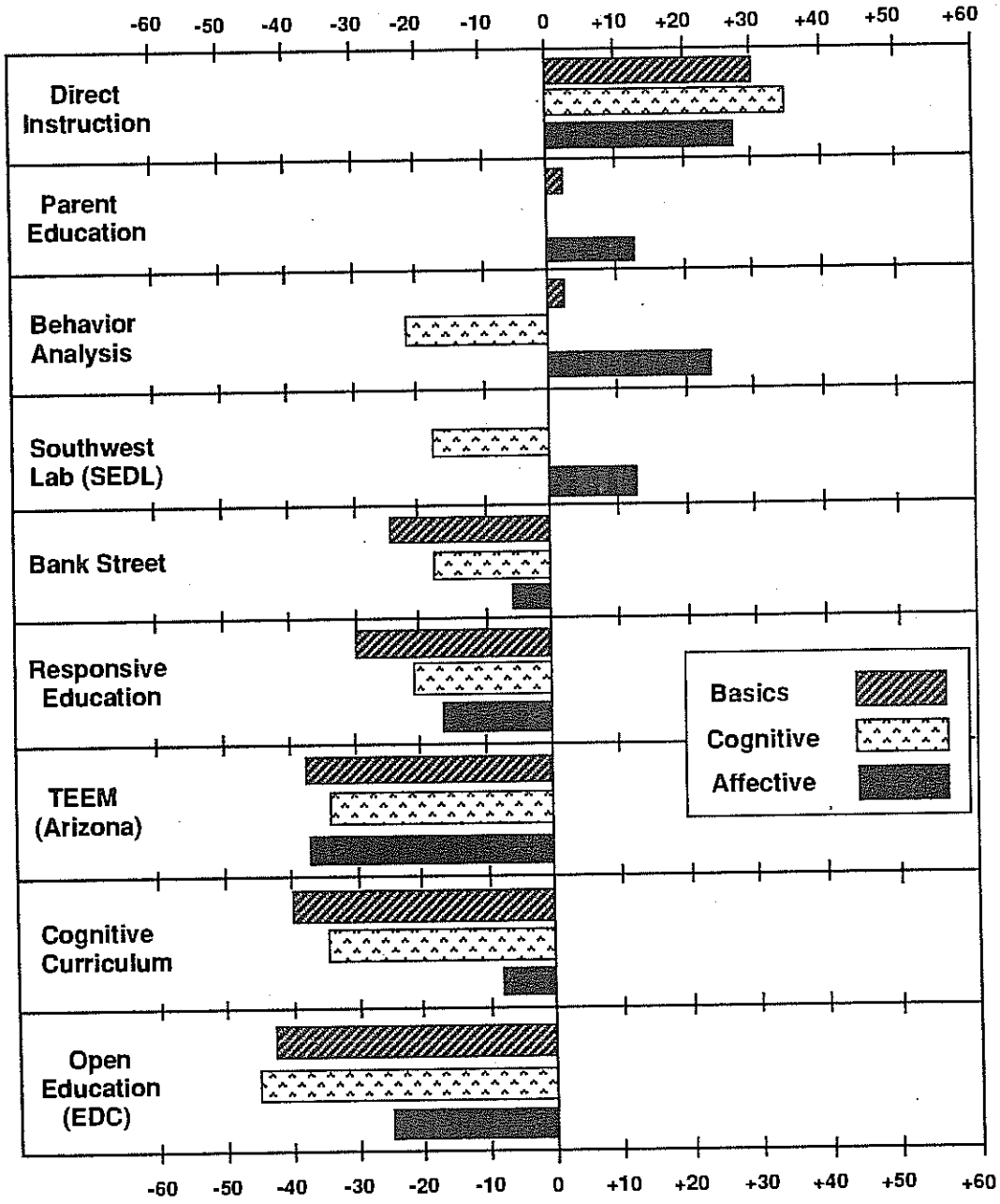
12
~~Trucks~~ Other 86
——————————> ~~Vehicles~~

To complete the table, students must recognize that the columns and the rows are number families. For example, in the first row, the number family for the morning ferry, 38 ---[a]---> 226 yields as subtraction problem, 226-38. The answer, 188, is the number of other vehicles on the morning ferry (cell a). Using the number family strategy for the classification problems embedded in the table, the students can solve for any missing value in the table.

The data analysis strategy serves as background knowledge for a variety of naturalistic survey activities that involve first collecting and then analyzing data. For example, students can survey the preferences of boys versus girls regarding different types of movies, action versus comedy movies, or collect data on the number of cars versus bicycles on streets with bike lanes and streets without bike lanes. The range of applicability is immense. Even more important, because of the way in which the program builds on prior knowledge, the likelihood of success is great. The number-family analysis is a powerful example of how extending background knowledge in a clear, systematic way to form new schemata

FIGURE 1

Percent of Significant Outcomes on Three Types of Measures for Nine Major Follow Through Models



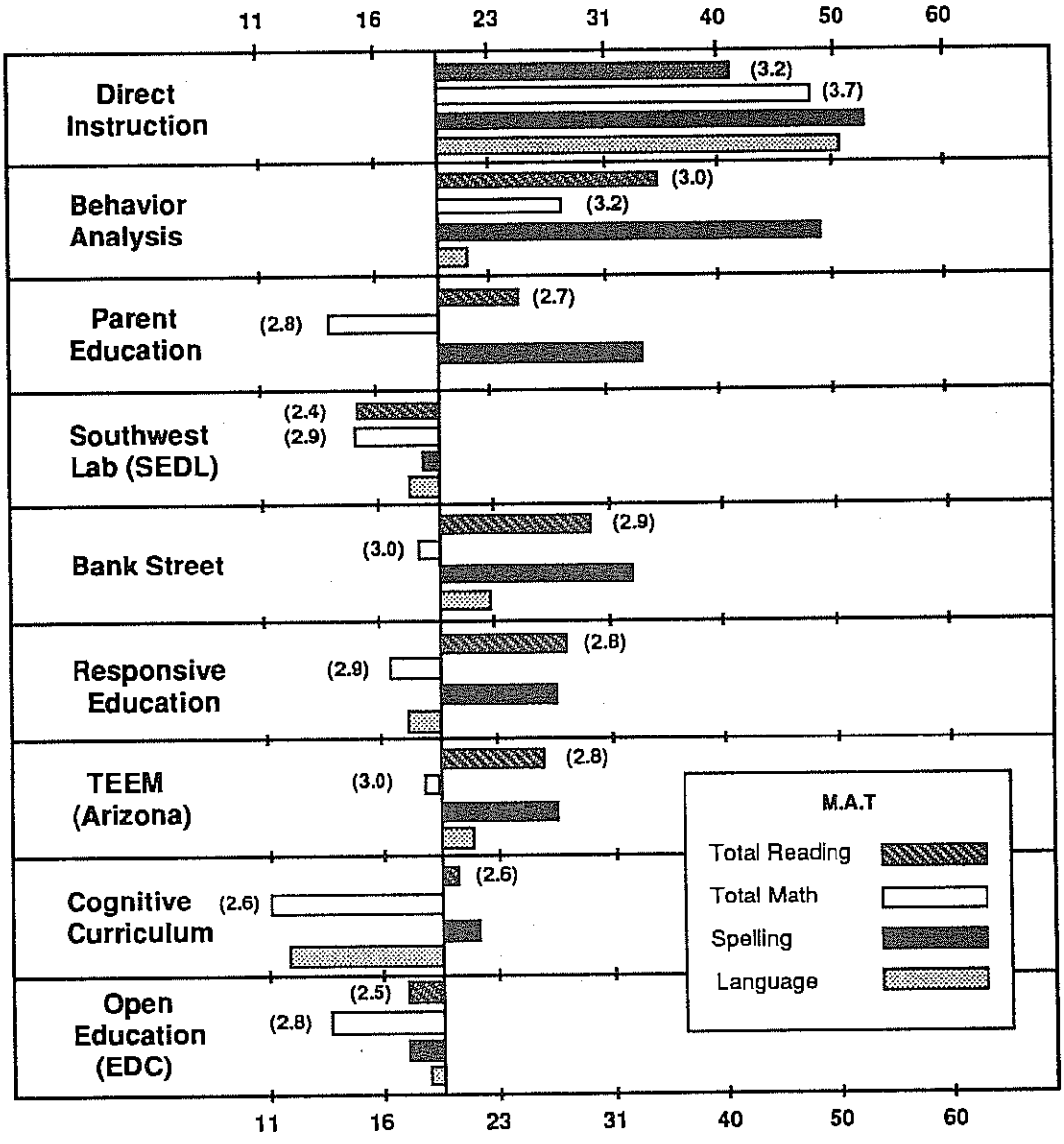
contributes to both understanding and efficient learning. With a teacher as their guide, students can experience number families as one of Gelman's (1986) "root meanings": A focus on different algorithmic instantiations of a set of principles helps teach children that procedures that seem very different on the surface can share the same mathematical underpinning and, hence, root meanings (p. 350).

How Well Does DI Work?

Researchers from within and outside the United States have investigated Direct Instruction with students at different ages and with different needs. Their findings attest to the potential of Direct Instruction to contribute to students' competence and confidence. As mentioned earlier, over 20 studies have investigated the application of the DI curriculum analysis to higher-order thinking (Carnine & Kamaeenui, 1991). However, the most extensive research has been carried out with elementary-grade students.

FIGURE 2

Percentile Scores on a One-fourth Standard Deviation Scale for Four Standardized Test Measures Across Nine Major Follow Through Models. Grade Equivalents for Reading and Mathematics are Given in Parentheses.



Findings From Independent Researchers. The National Follow Through Project included a large-scale, longitudinal study of over 20 different approaches to teaching economically disadvantaged K-3 students. At the project's peak, 7,500 low-income children from a wide range of low-income communities participated each year.

Follow Through evaluation data were gathered and then analyzed by two impartial, independent agencies, respectively, the Stanford Research Institute and Abt Associates (Stebbins, 1976; Stebbins, St. Pierre, Proper, Anderson, & Cerva, 1977). Abt compared experimental students with control students on three types of measures: basic, cognitive, and affective. A crude metric of overall effectiveness can be found by combining positive and negative effects and dividing by the total number of comparisons; for example, in the cognitive skills area, 10 significant negative effects combined with 20 significant positive effects divided by 100 total comparisons would yield an overall effect of +10%. The actual percents are summarized in Figure 1 for the nine largest Models. Note that the traditional basal and the inductive, constructivist approaches (the bottom five models in Figure 1) not only have fewer positive outcomes than the Direct Instruction Model, these models have more negative outcomes than positive. This pattern of negative outcomes occurs with affective measures as well as with academic measures.

The various Abt reports also provided median grade-equivalent scores by site and by sponsor for four Metropolitan Achievement Test measures: Total Reading, Math, Spelling, and Language. The means for these data, by model (converted to percentiles) for students entering kindergarten, are presented in Figure 2 on a one-fourth standard deviation scale. With this display, differences among sponsors of one-quarter standard deviation or more are easily detected and a norm reference is provided. The average achievement expectation for disadvantaged children without special help was thought to be 20th percentile. So we have chosen this percentile as our baseline in drawing the graphs in Figure 2. (Scores for entering first-grade students, who had one less year of instruction, are lower).

The major objective of the Direct Instruction Follow-Through Program was to bring the achievement levels of disadvantaged primary students up to the national median. Figure 2 indicates that Direct Instruction students are close to or at national norms on all measures. On the other hand, students in many other Follow-Through programs performed worse than they would have been expected to perform without any intervention.

Abt researchers noted that Direct Instruction students achieved well not only in these basic skills areas, but in the cognitive skills areas of reading comprehension, math problem solving, and math concepts, too. Further, Direct Instruction students' scores were quite high in the affective domain, suggesting that competence enhances self-esteem and not vice versa (Stebbins et al., 1977). This last result especially surprised Abt researchers who wrote:
The performance of Follow Through children in Direct Instruction sites on the affective measures is an unexpected result. The Direct Instruction Model does not explicitly emphasize affective outcomes of instruction, but the sponsor has asserted that they will be consequences of effective teaching. Critics of the model have predicted that the emphasis on tightly controlled instruction might discourage children from freely expressing themselves, and thus inhibit the development of self-esteem and other affective skills. In fact, this is not the case (Abt, IV-B, p. 73).

Parental Involvement. In an analysis of the Follow Through parent data for all models, Haney (1977) found moderate to high parent involvement in all the Direct Instruction school districts. Parents significantly disagreed with the view that there is not much parents can do about changing the educational situation in their community. These parents viewed school as helpful not only to their children, but also to themselves, particularly in terms of learning about teaching, learning how to help at home with their children's school work, understanding better how their children learn, and meeting other parents.

Another very interesting finding had to do with a comparison of parents of students from different schools who were receiving instruction from different Follow Through Models. Parents of Direct Instruction students most frequently felt that school had appreciably helped their children academically. Because children in Direct Instruction classrooms had significantly higher scores than other Follow Through children, this parental perception corresponded not only to the goals, but to the actual accomplishment of the Direct Instruction Model.

Findings from Direct Instruction Researchers. The preceding data were collected and analyzed by impartial agencies. The Direct Instruction Follow Through Model conducted a number of supplementary studies, which are briefly summarized below.

1. A greater measurable and educationally significant benefit of .6 to .8 grade equivalents is present at the end of third grade for those students who received an extra year of Direct Instruction; i.e., they began in kindergarten rather than in first grade (Becker & Engelmann, 1978; Gersten, Darch, & Gleason, 1988).

2. Significant gains in IQ are found, which are largely maintained through third grade. Students entering the program with high IQs (≥ 111) do not lose IQ points during the Follow Through years, though one might expect some regression over time. And students entering with low IQs actually gain IQ points—entering K students with IQs below 71 gain 17 points and entering first grade students gain 9.4 points. Gains for the children with entering IQs in the 71-90 range are (kindergarten) 15.6 and (first grade) 9.2 points (Gersten, Becker, Heiry, & White, 1984).

3. Studies of low-IQ students (< 80) show that the program is clearly effective. In fact, these students gain nearly as much each year, in reading (decoding) and math, as the Direct Instruction students with higher IQs. These gains are more than a year-per-year on the Wide-Range Achievement Test in reading (WRAT) and year-per-year on MAT Total Math (Gersten, Becker, Heiry, & White, 1984).

4. Longitudinal studies of DI and comparable non-DI students have followed these students after leaving third grade. All the significant differences favored the Direct Instruction students: five on academic measures, three on attendance, two on college acceptance, and three on reduced retention rates (Gersten & Keating, 1987).

5. Additional evaluation research is now showing that the model generalizes across both time and communities. The Department of Education's Joint Dissemination Review Panel validated educational programs as exemplary and qualified them for national dissemination. All 12 Direct Instruction Follow Through projects were submitted for validation, eleven of which had 8-10 years of data on successive groups of children. Collectively, these projects' schools sampled a full range of students: large cities (New York, San Diego, Washington, DC), middle-sized cities (Flint, MI; Dayton, OH; E. St. Louis, IL); rural white communities (Flippin, AR; Smithville, TN); a rural black community (Williamsburg, SC); Latino communities (Uvalde, TX; E. Las Vegas, NM); and a Native American community (Cherokee, NC). **One hundred percent of the DI projects were certified as exemplary in reading and mathematics for the primary grades.**

Future Directions

The technical goal of Direct Instruction is to reveal and communicate the underlying order of knowledge—the logic of science, the poetic unity of art, the underlying sense of the universe—in a way that this order can be understood, applied, built upon, or transformed into new knowledge. The search for underlying schemata is unending; the history and math analyses illustrated in this chapter will hopefully be replaced by better ones over time. New analyses need to be developed in a broad range of higher-order applications, particularly problem solving and reasoning. Finally, students must do more than problem solve and reason; they must be able to communicate to others the hows and whys of these applications through oral and written expression.

A quite different, but equally important, communication goal is to explain (1) that **DI is not a traditional "teacher dominance" approach, as represented by typical textbooks,** and (2) that **DI does believe students should be able to successfully engage in "student-dominated" activities.** The designers of Direct Instruction never thought that systematic, intensive, directed instruction should fill up every minute of the school day year after year. Rather, DI was designed to use as little time as possible in preparing children to succeed in those activities that are common in school and life, including student-dominated activities. The DI teacher structures learning to the minimum extent necessary to ensure success in its initial phases, but gradually steps back as students are able to cope successfully with the unstructured situations of life, including higher-level thinking.

Unfortunately, most educators believe that systematic, intensive teacher-directed instruction, even in initial learning, is incompatible with higher-order thinking. This is probably true in the absence of a curriculum analysis that identifies and develops underlying schemata. However, neither intensive teaching from most basals nor switching to student-dominated, process approaches will develop higher-order thinking in most at-risk students. In discussing a study of a carefully implemented, student-dominated approach to literacy with Hispanic students, Reyes (1991) found that instead of feeling like . . . "members of the literacy club" as Frank Smith (1986) predicts, the students wrote comments in their journals and literature logs like: "I hate reading," "The book is too boring and too long," or "Please tell me a bit about the book so I'll know what it is about." These revealed that the students felt outside the club. The students provided many hints that they needed help in mastering the literacy tasks, but their pleas went unheeded by the teachers who felt that it was only a matter of time before the kinds would get the hang of it. The process needed time. The teachers

hesitated "imposing" their expertise in the selection of books. They advised students to keep trying, that they would eventually find a book of their liking (p. 4).

These students ran out of time. They made no discernable improvement in literacy over the course of the school year. What educators need to realize is that intensive, explicit instruction of underlying schemata is crucial for at-risk students. In writing about the education of Black students, Delpit (1988) noted:

> *"If such explicitness is not provided to students, what it feels like to people who are old enough to judge is that there are secrets being kept, that time is being wasted, that the teacher is abdicating his or her duty to teach"* (p. 287).

In a recent review of intervention techniques and programs for improving academic performance, Elliott and Shapiro (1990) point out the need for DI to better explain what it can accomplish and why:

> *"Future research issues related to Direct Instruction do not need to center upon demonstrations of its effectiveness. These data exist and are convincing. More important, however, efforts need to be devoted to examining how these strategies can be adopted more widely into the educational system. . . . **It is unfortunate that the technology and resources exist for accelerating the academic performance of low-achieving youngsters, but continue to go relatively untapped** "(p. 654).*

It may be that the only way teachers will come to better understand DI is by using it. In a description of the evolution of teachers' attitudes toward DI during the course of an implementation mandated by court order, Cronin (1980) reported that most of the teachers initially disliked several features of Direct Instruction—the scripted questions for teachers, in-class supervision, and prescribed teaching techniques. After six months, however, the teachers reported that their students were reading at a level they thought unimaginable for inner-city minority students; the teachers' attitudes toward Direct Instruction changed dramatically.

References

Abt Associates (1977). *Education as experimentation: A planned variation model*: (Vol. IV). Cambridge, MA.

Becker, W. C., & Engelmann, S. (1978). Analysis of achievement data on six cohorts of low-income children from 20 school districts in the University of Oregon Direct Instruction Follow Through Model (Technical Report 78-1). Eugene, OR. University of Oregon.

Bereiter, C., & Engelmann, S. (1966). *Teaching disadvantaged children in the preschool.* Engelwood Cliffs, NJ: Prentice-Hall, Inc.

Bruner, J. S. (1960). *The process of education.* New York: Vintage.

Carnine, D. (1991). Curricular interventions for teaching higher-order thinking for all students. Introduction to the special series. *Journal of Learning Disabilities.*

Carnine, D., Granzin, A., & Becker, W. (1988). Direct instruction. In J. Graden, J. Zins, & M. Curtis (Eds.), *Alternative educational delivery systems: Enhancing instructional options for all students* (pp. 327-349). Washington, DC: National Association of School Psychologists.

Carnine, D., & Kameenui, E. (1992). Teaching higher order thinking to all students. Austin TX: Pro Ed.

Cronin, D. P. (1980). *Implementation Study, Year 2, Instructional Staff Interviews.* Los Altos, CA: Emrick, 1980.

Delpit, L. D. (1988). The silenced dialogue: Power and pedagogy in educating other people's children. *Harvard Education Review*, 58, 280-298.

Elliott, S. N., & Shapiro, E. S. (1990). Intervention techniques and programs for academic performance problems. In T. B. Gutkin and C. R. Reynolds (Eds.), *The handbook of school psychology.* New York: John Wiley & Sons.

Engelmann, S., & Bereiter, C. (1966). *Teaching Disadvantaged Children in the Preschool.* Engelwood Cliffs, NJ: Prentice-Hall, Inc.

Engelmann, S., & Carnine, D. (1991a). *Connecting Math Concepts.* Chicago, IL: Science Research Associates.

Engelmann, S., & Carnine, D. (1991b). *Theory of instruction: Principles and applications.* Eugene, OR: Association for Direct Instruction.

Flavell, J. H. (1971). Stage-rclated properties of cognitive development. *Cognitive Psychology*, 2, 421-453.

Gelman, R. (1986). Toward an understanding-based theory of mathematics learning and instruction, or in praise of Lampert on teaching multiplication *Cognition and Instruction*, 3, 349-355.

Gersten, R., Becker, W., Heiry, T., & White, W. A. (1984). Entry I.Q. and yearly academic growth of children in Direct Instruction Programs: A longitudinal study of low SES children. *Educational Evaluation and Policy Analysis*, 6,(2) 109-121.

Gersten, R., Darch, C., & Gleason, M. (1988). The effectiveness of academic kindergartens for low-income students: Analysis and discussion. *Elementary School Journal.*

Gersten, R., & Keating, T. (1987). Improving high school performance of "at risk" students: A study of long-term benefits of direct instruction. *Educational Leadership, 44*(6), 28-31.

Haney, W. (1977). Reanalysis of Follow Through parent and teacher data. Boston: Huron Institute.

Kinder, D., & Bursuck, W. (1991). The search for a unified social studies curriculum: Does history really repeat itself? *Journal of Learning Disabilities, 24*(5), 270-275.

Kinder, D., Gersten, R., & Kelly, B. (1989, March). *Expert math instruction for at risk students.* Paper presented at the annual meeting of American Educational Research Association, San Francisco, CA.

McDaniel, M. A., & Schlager, M. S. (1990). Discovery learning and transfer of problem solving. *Cognition and Instruction, 7*(2), 129-159.

National Council of Teachers of Mathematics Teaching Standards, 1991, p. 144.

Polya, G. (1973). *How to solve it.* Princeton, NJ: Princeton University Press.

Prawat, R. S. (1989). Promoting access to knowledge, strategy, and disposition in students: A research synthesis. *Review of Educational Research, 59*(1), 1-42.

Reyes, Maria de la Luz (1991). *The "one size fits all" approach to literacy.* Paper presented at AERA in Chicago, Il.

Rich, H. L., & Ross, S. M. (1989). Students' time on learning tasks in special education. *Exceptional Children, 55*(6), 508-515.

Smith, Frank (1986). *Insult to intelligence.* New York: Arbor House.

Stebbins, L. ed. (1976). Education experimentation: A panned variation model. Vol. III, A. Cambridge, MA: Abt Associates, 1976.

Stebbins, L., St. Pierre, R., Proper, E., Anderson, R., & Cerva, T. (1977). Education as experimentation: A planned variation model. Vol. IV, A-D. *An Evaluation of Follow Through.* Cambridge, MA: Abt Associates, 1977.

Smith, F. (1986). *Insult to intelligence.* New York: Arbor House.

Tyson, H., & Woodward, A. (1989). Why students aren't learning very much from textbooks. *Educational Leadership, 47*, 14-17.

ADI NEWS INDEX 1988-1992

Back issues available on request

Snmmer, 1992; Volume 11, Number 4

Sprick, R. Myths, misconceptions, and the thief at the door. (pp. 9-13).
Keynote address: Perspective; educational policy.

Archer, A. Promoting school success--study skills and what we've learned from DI. (pp. 14-19).
Keynote address: Study skills instruction; features of DI.

Grossen, B. Herbie's blue socks and the support for holistic approaches. (pp. 20-21).
Perspective: holistic approaches; educational research methodology.

Isaacson, S. Volleyball and other analogies: A response to Englert. (pp. 22-27).
Perspective: Holistic approaches.

Research brief: Whole language instruction. (pp. 28).
Research review: Reading; holistic approaches.

Schwartz, J., & Thomas, K. Overview of the research on reading and direct instruction. (pp. 29-32).
Research review: Reading; holistic approaches; Direct Instruction.

News update; National curriculum committee promotes unproven practice as national standard. (pp. 33).
Perspective: Mathematics; holistic approaches; educational policy.

Grossen, B., & Ewing, S. Raising mathematics problem-solving performance: Do the NCTM teaching standards help? (pp. 34-42).
Research study: Mathematics; holistic approaches; Direct Instruction.

Tarver, S. A time for change: A review of Engelmann's *War on Academic Child Abuse*. (pp. 43-47)
Book review: Educational policy.

Green, C. CAI in teaching math fact to students with mild handicaps. (pp. 48-50).
Research study: Mathematics; Direct Instruction; Computers; Technology.

Spring, 1992; Volume 11, Number 3

Marchand-Martella, N. & Lignugaris/Kraft, B. Preservice teacher performance in a Direct Instruction practicum using student teachers and university personnel as supervisors. (pp. 2-8).
Program evaluation: Supervision; teacher training; coaching; peer tutoring.

Umbach, B., Darch, C., & Halpin, G. Teaching reading to low performing first graders in rural schools: A comparison of two instructional approaches. (pp. 9-14).
Program evaluation: Research study; methods comparison; traditional basal vs. DI reading approaches.

Helmke, L. Brief report–connecting math concepts in special education. (p. 14).
Success story: Math instruction; progress report.

Vitale, M. & Romance, N. Content knowledge and methodology in teacher preparation. (pp. 15-24).
Research synthesis: Teacher training; teacher preparation; methodology.

Carnine, D. The missing link in improving schools–reforming educational leaders. (pp.25-35.)
Perspective: Educational reform.

Winter, 1992; Volume 11, Number 2

On Track: 15 years of student improvement–Wesley Elementary School. (pp. 1-3).
Success story: Follow Through; math and reading instruction; test results.

Lu, E.T. Effects of Direct Instruction math on achievement of the mentally retarded in Taiwan, ROC. (pp. 5-8).
International: Research study; math instruction.

Becker-Eisele,J. & Tindell, M. Cognitive rehabilitation of brain-injured children: A Direct Instruction approach. (pp. 8-11).
Research synthesis: Skill building; math and reading instruction; on-task behavior management.

Thomson, B. Corrective reading pilot study 1989-90. (pp.11-13).
Success story: LD students; reading instruction; DI vs. traditional basal vs. whole language.

Carnine, D. & Kameenui, E. National Center to Improve Quality of Technology, Media and Materials. (p. 13).
News: Curricula change; development and adoption of high quality instructional programs and materials.

Leach, D. & Siddall, S. Parental involvement in the teaching of reading: A comparison of hearing reading, paired reading, pause-prompt-praise and Direct Instruction models. (pp. 14-19).
Research study: Parent training; coaching; reading instruction.

Weinheimer, B. & Weisberg, P. Acquisition of basic concepts by mentally retarded and nonretarded children through video-presented, stimulus conversion procedures. (pp. 20-25).
Research study: Math instruction; video presentation.

Salerno, C. A comparison of classrooms using a meaning-centered approach and a eode-centered approach. (pp. 26-29).
Research study: Whole language educational reform processes; California English Language Arts Framework.

Fall, 1991; Volume 11, Number 1

Mkhonto, D. Parallels in educational practices in U.S. and South Africa. (pp. 3-5).
International: Perspective; criterion for textbook selection; quality of materials; DI success.
Kelly, B. Federal grant provides free math workshops on improving math curricular material. (p. 6).
Workshop news: math instruction gr. 1-6; program evaluation and modification; teacher training.
Sommers, J. Direct Instruction programs produce signifieant gains with at-risk middle school students. (pp. 7-14).
Program evaluation: Basic skills instruction; reading, math and spelling instruction.
Belmont Community School, Worcester, Massachusetts. (pp.15-16).
Success story: ESL students; reading instruction.
Kameenui, E. Toward a scientific pedagogy of learning disabilities–a sameness in the message. (pp. 17-22).
Perspective: Curricula development with regards to LD students.
Glang, A., Singer, G., Cooley, E., & Tish, N. Using Direct Instruction with brain injured students. (pp. 23-28).
Research study: Evaluation and individualized instruction; language skills; math instruction.
Gersten, R. & Woodward, J. The quest to translate research into classroom practice: Strategies for assisting classroom teacher's work with at-risk students. (pp. 29-37).
Research synthesis: Teacher training model development; coaching; on-task behavior management.

Summer, 1991; Volume 10, Number 4

Muthukrishna, A., Carnine, D., Grossen, B., & Miller, S. Children's alternative frameworks: Should the be directly addressed in science instruction. (pp. 1-9).
Research study: Science instruction; curriculum design.
Dixon, R. The application of DI sameness analysis to spelling. (pp. 10-15).
Research into practice: Instructional design; content analysis; spelling instruction; LD and regular students.
Kinder, D. & Bursuck, W. The search for a unified social studies curriculum: Does history really repeat itself? (pp. 16-23).
Research into practice: Instructional design; curriculum analysis; history instruction.
Engelmann, S., Carnine, D., & Steely, D. Making connections in mathematics. (pp. 24-38).
Research into practice: instructional design: curriculum analysis; mathematics instruction.
Linking special and general education services through Direct Instruction. (pp. 39-40).
Field report: Special education student mainstreaming; reading instruction; CAT scores.
Rock Hill School District. (pp. 41-42).
Success story: LD students; reading instruction.
A successful beginning–the learning lab at Baylor University. (pp.42-44).
Success story: Teacher training.

Spring, 1991; Volume 10, Number 3

Groff, P. Critical look at a new reading program. (p.1).
Perspective: California Assessment Program; whole language.
Brynildson, K. & Vreeland, M. Effects of audiotape self-monitoring on DI teacher presentation techniques. (pp. 3-10).
Research study: Teacher training; fidelity of DI implementation.
Darch, C. & Simpson, R. Effectiveness of visual imagery versus rule-based strategies in teaching spelling to learning disabled students. (pp.11-17).
Research study: LD students; spelling instruction.
Linking special and general education services through Direct Instruction. (pp. 18-19).
Success story: DI implementation; reading instruction.
Against all odds–Edison Elementary School. (pp. 20-21).
Success story Long-term DI implementation; Follow Through teacher survey.
Little Haiti's new elementary school–Francoise Dominique Toussant L'Overture. (p. 22).
Success story: New DI implementation; reading instruction; curriculum selection; test score improvement.
Silbert, J. & Carnine, D. Effective instruction in mathematics–the role of basal programs: A case study of fifth grade fractions. (pp. 23-31).
Research synthesis: Mathematics instruction; critique of NCTM standards.
Woodward, J. Causal structures in science and their effects on recall and problem solving. (pp. 32-41).
Research study: Earth science video-disc program; implications for textbook revision.

Winter, 1991; Volume 10, Number 2

Engelmann, S. Why I sued California. (pp. 4-8).
Perspective: Whole language vs. DI.

Gersten, R. & Dimino, J. Reading instruction for at-risk students–implications of current research. (pp. 9-20).
Research into practice: Reading instruction; whole language/literature based approaches; DI.

Dixon, R. Direct Instruction–that's integrated language arts? (pp. 21-24).
Perspective: DI vs. isolated skills instruction; spelling instruction.

Kameenui, E., Carnine, D., Dimino, J. & Carnine, L. The textbook adoption process: Increasing the importance of pedagogical variables. (pp. 25-31).
Research synthesis: Textbook adoption; CAW intervention; mathematics instruction.

Curriculum adoption in California–Reading Mastery and literature-based programs. (pp.31-32).
Success story: New Language Arts Framework; comparison of reading curricula.

Beyond fiction: Reading for content–John Fenwick School. (pp.32-34).
Success story: Reading instruction.

Colvin, G., Patching, B., & Sugai, G. Pre-correction: A strategy for managing predictable problem behaviors. (pp. 34-40).
Research into practice: Managing behavior problems; teacher training.

Fall, 1990; Volume 10, Number 1

Dixon, R. & Carnine, D. Improving mathematics instruction. (pp. 1-4).
Perspective: Mathematics instruction.

Carnine, D. Reforming mathematics instruction–the role of curriculum materials. (pp. 5-16).
Research into practice: Mathematics instruction.

Carnine, D. & Engelmann, S. Making connections in third grade mathematics–Connecting Math Concepts. (pp. 17-27).
Instructional design: Mathematics strategies.

Steely, D., Carnine, D., & Engelmann, S. Teaching problem solving in mathematics. (pp. 28-39).
Instructional design: Mathematics problem solving.

Silbert, J. & Carnine, D. The mathematics curriculum–standards, textbooks, and pedagogy: A case study of fifth grade division. (pp. 39-47).
Research synthesis: Mathematics instruction; critique of NCTM Standards.

Evans, D. & Carnine, D. Manipulatives–the effective way. (pp. 48-55).
Research study: Efficiency and effectiveness of instruction; mathematics instruction.

Summer, 1990; Volume 9, Number 4

Dixon, R. The only theory of instruction–revisited. (pp. 1-3).
Perspective: Book review; Theory of Instruction by Engelmann & Carnine.

Grossen, B. & Kelly, B. Effectiveness of Direct Instruction in a third-world context. (pp. 4-11).
Research study: DI curriculum; mathematics, English and reading instruction.

Adams, M. Beginning to read: Thinking and learning about print. (pp. 12-15).
Book review: Research summary; effective reading instruction.

Good, R., Kaminski, R., Schwarz, I., & Doyle, C. Identifying at-risk kindergarten and first grade students: Recent developments. (pp. 15-21).
Research synthesis: Reading instruction; Chapter I programs; at-risk population.

Maher, L. The effect of Direct Instruction or reading and language scores of an at-risk population. (pp. 22-24).
Research study: Reading, language arts instruction; at-risk population.

Mountain View Elementary School–A case for restructuring. (pp.24-26).
Success story: DI implementation; ESL students; reading and spelling instruction; restructuring.

Colvin, G. Procedures for preventing serious acting-out behavior in the classroom. (pp. 27-30).
Research into practice: Managing behavior problems.

John Ballantyne Elementary School, El Cajon, California. (pp. 31-32).
Success story: DI implementation; reading and mathematics instruction.

Spring, 1990; Volume 9, Number 3

Carnine, D. Beyond technique–Direct Instruction and higher order thinking skills. (pp. 1-12).
Research synthesis: DI; knowledge linking; sameness.

Gleason, M., Krauss, J., & Tindal, G. Using story retell as a measure of comprehension. (pp. 13-18).
Research study: Reading instruction; measurement.

Clunies-Ross, G. Some effects of Direct Instruction in comprehension skills on intellectual performance. (pp. 18-21).
Research study: CRP; decoding and comprehension; language instruction.

Hall, T., Gelbrich, J., & Tindal, G. Teacher use of various data sources for grouping, placement, and identification decisions. (pp. 22-27).
Research study: Reading instruction; teacher training.

Engelmann, S. Teachers, schema, and instruction. (pp. 27-35).
Perspective: teacher training; critique of schema theory.
Oak Park & River Forest High School. (pp. 36-38).
Success story Structured studies program; language arts and mathematics instruction.

Winter, 1990; Volume 9, Number 2

Chall, J. Learning to read: The great debate 20 years later–a response to "Debunking the Great Phonics Myth". (pp. 1-17).
Research synthesis: Effective reading instruction; phonics.
Gregory, P. Action research in the secondary school. (p.18).
Book review: Scientific school psychologist; accomplishments.
Weisberg, P. Decoding words: The facilitative effects of saying sounds in a word–without pausing. (pp. 19-23).
Research study: Reading instruction; decoding; oral blending; phonic-based curricula.
Weisberg, P., Andracchio, B., & Savard, C. Oral blending in young children: Effects of sound pauses, initial sound, and word familiarity. (pp. 23-29).
Research study: Reading instruction; blending.
Heward, W., Courson, F., & Marayan, J. Using choral responding to increase active student response. (pp. 30-33).
Research synthesis: Choral response; DISTAR; procedures and guidelines.
Harper, G., Mallette, B., Maheady, L., & Clifton, R. Applications of peer tutoring to arithmetic & spelling. (pp. 34-38).
Research study: Peer tutoring; at-risk populations; mathematics instruction.
Carnine, D. Designing practice activities. (pp. 39-43).
Research into practice: Mathematics instruction; retention building through practice.

Fall, 1989; Volume 9, Number 1

Aragon, M. An historical perspective of the early days of Follow Through in Las Vegas, New Mexico. (pp. 5-6).
Perspective: Follow Through; ESL students.
Paterson, G. Looking for Mr. Goodbooks–reflections on whole language and DI. (pp. 7-10).
Program evaluation: Phonics instruction vs. whole language.
Proctor, T. Attitudes toward Direct Instruction. (pp. 11-15).
Research study: Undergraduate special ed students; mathematics instruction; survey.
Carnine, D. New research on the brain–implications for instruction. (pp. 16-22).
Research synthesis: Mathematics instruction; sameness; retention.
Williams, Pl & Engelmann, S. Teaching absolute pitch. (pp. 23-26).
Research study: Using DI strategies.
Hofmeister, A. Individual differences and the form and function of instruction. (pp. 27-31).
Research synthesis: Group teaching; mastery learning; classroom management skills.
Sfondilias, J., Bailey, D., & Brewington, G. The courseware designer's toolkit–a first step toward an integrated environment for courseware designers. (pp. 32-37).
Report: Research development; computer based training; uses DI instructional design; productivity enhancement.

Summer, 1989; Volume 8, Number 4 (Special Historical Issue No. III)

Gersten, R., Zoref, L., & Carnine, D. Large city implementation study. (pp. 2-6).
Research synthesis: Program evaluation; Follow Through; implementation study of DI.
Darch, C. & Gersten, R. Teacher presentation variables–pacing and praise. (pp. 6-10).
Research study: Instructional presentation variables; LD students; reading instruction.
Gleason, M. Focus on student performance–the key to effective supervision. (pp. 10-11).
Perspective: Supervision model; reading instruction.
Carnine, D. Barriers to educational change. (pp. 12-15).
Perspective: School reform; innovative practices; curriculum evaluation; teacher training.
Vreeland, M. Corrective Spelling program evaluated. (p. 16).
Program evaluation: Spelling instruction; teacher training.
Engelmann, S. A study of 4th-6th grade basal reading series. (pp. 17-23).
Program evaluation: Reading instruction; basal program; teacher training.
Kelly, B., Carnine, D., Gersten, R., & Grossen, B. Videodisc instruction teaching fractions. (pp. 24-31).
Research study: Mathematics instruction; fractions; basal program vs. videodisc.
Carnine, D., Gersten, R., Gleason, M., & Johnson, G. Four studies on instructional design principles on CAI. (pp. 31-37).
Research synthesis: Computer assisted instruction; mildly handicapped learners; mathematics instruction.

Flesch, R. Why Johnny still can't read. (p. 38).
Book review: Phonics-first vs. look-and-say programs.

Anderson, R., Hiebert, E., Scott, J., & Wilkinson, I. Becoming a nation of readers. (pp. 39-43).
Book review: Reading instruction; basal readers; phonics; comprehension.

Gersten, R. A response to the attack on DI preschool programs by Schweinhart, Weikart, & Larner. (pp. 43-48).
Perspective: Family background; social issues; IQ; academic achievement.

Spring, 1989; Volume 8, Number 3

Carnine, D. & Carnine, L. Carnine's lecture in Italy. (pp. 3-5).
Field report: Mainstreaming handicapped students; generalizing abilities; developing occupational skills.

Groff, P. California textbook commission chooses myth over research. (pp. 6-9).
Perspective: Reading instruction; textbook adoption policy.

Johnson, M. "Reading Without Nonsense" is pure nonsense. (p. 10).
Perspective: Canada; reading instruction; phonics; spelling instruction.

Becker, W. The silenced dialogue–more DI vs. process approaches. (pp. 11-12).
Perspective: Process-oriented vs. skills-oriented instruction; at-risk groups.

Chall, J. Reading & early childhood education: The critical issues. (pp. 12-15).
Perspective: Early reading instruction.

Rankin, Pat. Review: CAI books for the classroom teacher. (p. 16).
Book review: Microcomputer applications in the elementary classroom by Bright; Selecting and implementing educational software by Miller.

Sugai, G. & Colvin, G. Leveled behavior management systems: Development and operation. (pp. 17-19).
Research into practice: Behavior management; teacher training.

Breen, C. & Haring, T. Extending critical skills with low performers–Between class generalization. (pp. 20-26).
Research into practice: Complex skill cluster instruction; severely handicapped students; between-class generalization.

Grossen, B. & Carnine, D. Teaching syllogistic reasoning skills using computers. (pp. 26-35).
Research study: Reading instruction; LD students; computer assisted instruction.

Winter, 1989; Volume 8, Number 2 (Special Historical Issue No. II)

Engelmann, S. & Carnine, D. DI outcomes with middle-class second graders. (pp. 2-5).
Research synthesis: Reading instruction; mathematics instruction; sameness in learning of high and low performing students.

Schaefer, E. Is DI only for low achievers? (pp. 6-8).
Research synthesis: DISTAR; effects with average and above average student population.

Becker, W. Mainstreaming Down's Syndrome kids. (p. 9).
Success story: Reading instruction; mathematics instruction.

Colvin, G., Sessions, L., Antrim, M., & Ordes, D. Bringing serious behavior disorders under control. (pp. 10-12).
Research into practice: Behavior management.

Horner, R. & Rose, H. Generalized skills training with severely retarded students. (pp. 12-14).
Program evaluation: DI; acquisition of general case skills and community skills.

Rosov, R. Tactile reception of speech by the deaf. (pp. 15-17).
Intervention evaluation: Expressive and receptive speech and language development; tactual vocoder design and fabrication.

Herr, C. Using Corrective Reading with adults. (pp. 18-21).
Research synthesis: Reading instruction; remedial instruction.

Carnine, D. Teaching complex content to secondary LD students. (pp. 21-28).
Research synthesis: Mainstreaming; instructional design; chemistry instruction; mathematics instruction; reasoning skills; CAI.

O'Neill, R. & Dunlap, G. DI principles work with autistic children. (pp. 21-31).
Research synthesis: Stimulus control; task variation; instructional pacing.

Stepnoski, M. A review of findings from the research institutes on learning disabilities. (pp. 31-36).
Research synthesis: Mildly handicapped students; instructional variables; instructional intervention; feedback and correction; mastery learning; teacher behaviors.

Schaefer, E. & Riggin, P. A success story–transition first grade. (pp. 36-38).
Success story: Language instruction; reading instruction; at-risk population.

Fall, 1988; Volume 8, Number 1

Snider, V. The role of prior knowledge in reading comprehension– a test with LD adolescents. (pp. 6-11).
Research study: Reading instruction; decoding and fluency deficiencies; hierarchical variables.

Gersten, R. & Dimino, J. Teaching literature analysis to low-performers using story grammar and scaffolded instruction. (pp. 12-15).
Intervention evaluation: At-risk populations; shared language.

Spence, I. A review of math tutor. (pp. 16-17).
Perspective: Software evaluation; DI model; 3rd-4th grade readability level.

Dixon, R. What are these Morning Star people? (pp. 17-20).
Perspective: Software evaluation; mathematics instruction.

Gleason, M., Carnine, D., & Boriero, D. CAI for math story problems–the role of good instructional design. (pp. 20-25).
Research study: Mathematics instruction; tutorial program.

Carnine, D., Hayden, M., Woodward, J., & Moore, L. A research review–low-cost networking for the teacher. (pp. 26-28).
Research synthesis: Individual pacing; Practice Assistant; Lecture Assistant; Grading Assistant; Teaching Assistant.

Moore, L. & Carnine, D. Instruction on ratios and proportions–active teaching with basals vs. videodisc. (pp. 29-35).
Research study: Mathematics instruction; word problems; explicit strategy instruction.

Glang, A., Gersten, R., & Singer, G. Computer assisted video instruction in training rehabilitation paraprofessionals. (pp. 36-42).
Research study: Behavior management; head-injured population; CAVI.

Summer, 1988; Volume 7, Number 4 (Special Historical Issue)

Carnine, D. & Becker, W. The birth of a new voice for excellence in education. (p. 2).
Perspective: ADI formulation; by laws.

Engelmann, S. On observing learning. (pp. 3-5).
Perspective: Teacher training; instructional techniques.

Becker, W. Does the IQ tell you who can learn more? (pp. 6-8).
Research study: IQ as measure of learning rate; home backgrounds.

Maggs, A. & Morath, P. Making moderately retarded children smarter. (pp. 8-9).
Program evaluation: Australia; DISTAR Language I program.

White, W.A.T. & Gersten, R. High school follow-up: The Uvalde TX study. (pp. 9-10).
Program evaluation: Follow Through: ESL.

Gersten, R., Brockway, M., & Henares, N. The Monterey DI program for students with limited English (ESL). (pp. 10-15).
Program evaluation: Reading and language instruction.

Campbell, M. Corrective Reading program evaluated with secondary students in San Diego. (pp. 15-17).
Program evaluation: Reading instruction; mainstreaming.

Arthur, C. Progress in a high school LD class. (pp. 17-18).
Program evaluation: reading, language, mathematics instruction.

White, W.A.T. A meta-analysis of the effects of Direct Instruction in special education. (pp. 19-25).
Research synthesis: Handicapped students; reading and mathematics instruction.

Weisberg, P. Reading instruction for poverty level preschoolers. (pp. 25-30).
Program evaluation: Reading instruction; modelling; on-task behaviors.

Colvin, G., Lowe, R., & Clanton, B. A school-wide discipline plan: A management primer for teachers and principals. (pp. 31-36).
Research into practice: Behavior management; peer pressure; discipline plans.

Sprick, R. Classroom management: Strategies for beginning the year. (pp. 36-38).
Research into practice: Behavior management; feedback; positive practice.

Colvin, G. & Lowe, R. Planning for substitute teachers. (pp. 39-41).
Research into practice: Behavior management; communication.

PROPOSED TITLE CHANGE

The ADI Board approved a recommendation to change the title of the *ADI News* to *Effective School Practices: An ADI Publication.* The Board believes the new title will better express the organization's mission as expressed in the ADI by-laws: "To bring to the field of education the latest in effective knowledge and procedures." In view of the national trend to completely ignore experimental research, it seems important that we highlight our interest in "effective," instead of faddish, unproven practices, as our defining feature. The current title rather highlights our interest in "DI" as opposed to possibly other effective practices. As a publication, our focus would remain centered on the needs and interests of practitioners and decision-makers.

Write and tell us how you feel about the change. Without any major objections the change will be effective in the next issue.

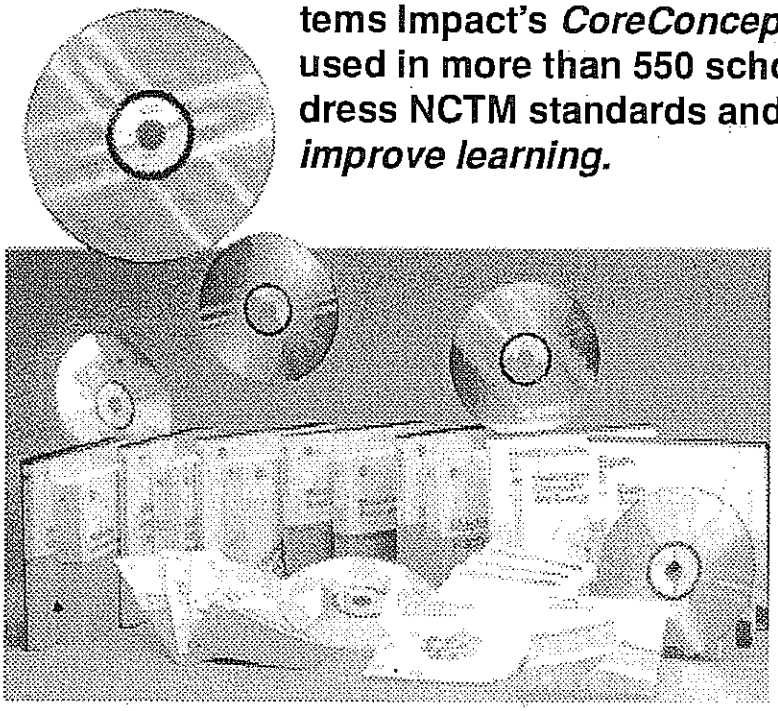
The Oregon Conference February 4-6, 1993
Eugene Conference Center, Hilton Hotel, Eugene, Oregon
Three days of Professional Development in Special Education
Full-day Pre-Conference Workshops, February 4, 1993
More than 70 presentations in resarch and practical experience by and for special educators
Some training sessions on the effective programs listed in this issue
Parents welcome
University Continuing Education Credit Available
Sponsored by the University of Oregon
College of Education

Pre-registration fee: $75.00 ($90.00 after February 1)
Oregon Conference Registration
238 College of Education
University of Oregon, Eugene, OR 97401-1215
FAX: (503) 346-5818

Engelmann's Programs on...

Interactive Videodisc:

Recognized as effective in improving Math and Science performance by the U.S. Department of Education, Systems Impact's *CoreConcepts*™ Programs, from BFA, are used in more than 550 school districts in 47 states, address NCTM standards and are *proven to significantly improve learning.*



Every lesson in the *CoreConcepts*™ Math and Science series fits into a 35-45 minute period and each program includes an **Instructor's Manual** and 30 **Student Response Booklets.**

Each program operates on the Pioneer® LD–V2200 and other consumers and industrial laser videodisc players, and is designed for use with the wireless remote control or the Pioneer ® UC–V104 Laser BarCode Scanner. Disc players and scanners are available for purchase through BFA.

Programs may be purchased individually or in sets.

Educators rave about *CoreConcepts*™ user friendly programs:

"CoreConcepts™ allow teachers to spend their time monitoring and interacting with their students. They remain in full control of the learning process."
–Supervisor of Externally Funded Projects,
Compton School District,
California

"As a staff development tool, the discs model good teaching and learning strategies. By using the Systems Impact Programs, effective teachers are becoming even more effective."
–Principal,
Cobb County Schools,
Georgia

"Remedial and Chapter 1 students in the Mastering Fractions program jumped more than 300% in fraction skills and improved 43% in the state math tests (TELS)."
–Bethel Park Schools District,
Pennsylvania

Software for CoreConcepts™ Math Videodiscs

We also offer a simple, efficient way to use the videodiscs with computers, giving students direct independent control over the *CoreConcepts*™ programs. Students mat work at their own pace in labs or at workstations, and the software provides teachers with the tools needed to monitor student progress.

Students control instruction with a mouse, following lessons as they would be presented in a classroom. Dynamic teaching segments, guided practice problems, student performance evaluations, quizzes and tests are directed by the computer. The need for reteaching is easily provided for, if necessary.

The software was designed to help teachers offer individualized attention to students who were absent from class, have difficulty with specific concepts or wish to work at an accelerated pace.

These software programs are compatible with Macintosh LC, Classic, SE, Plus, 512Ke or the Mac II series. An 800K disk drive, an interface cable and a color monitor are required for operation, and a printer and a hard drive are recommended. The software supports Pioneer ® 2200, 4200 and 6000A Laser Videodisc Player.

Software programs are available at $89.00 each.

A DOS-based version of the software programs is also available.

Discounts are available when purchasing complete sets.

EVERYTHING YOU NEED!

BFA Educational Media has all the hardware and accessories you need to use the *CoreConcepts*™ Interactive Videodisc Programs!

Special Offer!

If you don't have disc player, or could use another, purchase a complete Math or Science set with a Pioneer ® Laser Videodisc Player and

Save!

Science Set &Player
#40009 .....$5,200.00

Math Set & Player
#40011 .....$9,850.00

Call or write for price list.
BFA Educational Media
468 Park Avenue South, New York, NY 10016
(212) 684-5910 or (800)221-1274

NEW PRODUCT

SYSTEMS IMPACT VIDEODISC PROGRAM

PROBLEM SOLVING WITH GRAPHS, CHARTS, AND STATISTICS

A Systems Impact Videodisc Program to teach students in grades 4 through 7 generalizable concepts about graphing, statistics, and data analysis. These topics appear throughout the school curriculum in mathematics, reading, social studies, and study skills instruction. The program is designed to replace the graph-related lessons in a mathematics textbook.

Objectives:
The program's objectives match and exceed data skills objectives for grades 4 through 7 currently addressed in: (1) current mathematics textbooks, (2) standardized tests, and (3) the National Teachers of Mathematics (NCTM) Standards.

Design:
The program makes extensive use of real-world data in an interdisciplinary context. Students in the program work independently and in small groups to interpret, gather, describe, and display data. The program contains 15 lessons, comparable to the number of lessons in most textbook series. Each lesson requires approximately 30 to 40 minutes a day.

Research Base:
The Problem-Solving program was designed according to research-based principles of instruction, with careful attention to the details of instructional design. Extensive field-testing validated the effectiveness of the instructional design.

SPECIAL OFFER

Purchase your ***Problem Solving with Graphs, Charts and Statistics*** program BEFORE JUNE 1, 1993 AND SAVE.

Cost if purchased before June 1, 1993: $495.

Regular cost: $715.

Order Information from:
BFA Educational Media
468 Park Avenue South
New York, NY 10016
(212) 684-5910 or (1-800) 221-1274

New

Reasoning and Writing, Levels D and E

- Grounds writing skills in thinking skills
- Teaches the most important and generalizable foundation skills for literacy
- Strong applications orientation makes all activities meaningful
- Places strong emphasis on problem solving

Lays the foundations on which all literacy depends
Reasoning and Writing builds the foundations of literacy
Track sequencing develops skills continuously
Within each lesson, students work on skills and concepts drawn from many different tracks, as they successfully work on challenging material.
Fully field tested and verified for effectiveness
Reasoning and Writing is a classroom developed program in which every activity has proven successful.

***Reasoning and Writing*, Level D**
Authors: Siegfried Engelmann
and Jerry Silbert

The primary focus of Level D is on analysis. Students become critical thinkers, consumers, and communicators. They learn to clearly and succinctly express the problems in advertising, propaganda, and arguments. By the end of Level D, students can read and analyze an article, objectively summarize what the article states, and express in writing the inconsistencies and errors in the author's thinking. They can write precisely, give clear unambiguous directions, use facts in arguments, and distinguish general from specific. Their knowledge of grammar and complex sentence structure progresses as it is needed to express more complex thoughts.

***Reasoning and Writing*, Level E**
Authors: Siegfried Engelmann
and Bonnie Grossen

Level E continues to build logical analysis skills. Students learn to identify inaccuracies by comparing given information with an accurate reference source. They learn to explain the logical fallacies, contradictions, and misleading claims that they find in material they read. Students take notes on aurally presented information and from them reconstruct the passage in complete prose. They write plans for achieving goals and describe the advantages of one option over others. Students learn to use context to determine meanings and to write unambiguous descriptions. They edit sentences by reorganizing them to eliminate ambiguities.

Components
Compelete Set of Teacher Materials for each level contains 1 Teacher's Guide, 1 Teacher Presentation Book, and a separate Answer Key. Student materials include a textbook. Student materials must be ordered separately.

Reasoning and Writing, Level D
Grade 4

7-15737	Level D Reasoning and Writing Complete Set of Teacher Materials	$95.00
7-15735	Student Textbook	16.85
7-15732	Additional Answer Key	12.90

Reasoning and Writing, Level E
Grade 5 (Available late summer 1993)

7-15667	Level E Connecting Math Concepts Complete Set of Teacher Materials	$95.00
7-15765	Student Textbook	16.85
7-15666	Additional Answer Key	12.90

SRA
Macmillan/McGraw-Hill
PO Box 543
Blacklick, OHIO 43004
Phone: 1-800-843-8855
FAX: 1-614-860-1877

New

Connecting Math Concepts, Levels D and E

- Emphasizes the connections among math concepts
- Organizes lessons by related strands, not single topics
- Gives both guided and independent practice
- Places strong emphasis on problem solving

Important benefits for students and teachers

Connecting Math Concepts is designed to ensure that *all* students (not just some) will learn higher-order thinking and mathematics. What's more, they will apply what they know in a variety of meaningful activities as they learn to think and problem solve.

Develops important relationships among math concepts

The program establishes relationships among concepts and their application. *Connecting Math Concepts* introduces concepts at a reasonable rate and provides systematic, continuous review so that students learn, remember, and integrate the concepts they are taught.

Tested materials that really work

Connecting Math Concepts was field-tested in a variety of classrooms across the United States. The authors carefully reviewed teacher critiques and student performance on every lesson and based extensive revisions on this feedback.

***Connecting Math Concepts*, Level D**

Authors: Siegfried Engelmann, Doug Carnine, and Owen Engelmann

Building on the strong foundation of Levels A-C, Level D extends whole-number skills to include multiplication and division algorithms. Concepts and operations with fractions and mixed numbers are carefully presented and applied, and decimals are introduced. Extensive problem-solving activities emphasize strategies with tables, number families, and ratios. Other topics include perimeter, area, functions, and probability.

***Connecting Math Concepts*, Level E**

Authors: Siegfried Engelmann, Bernadette F. Kelly, and Doug Carnine

Level E shows the relationship between fractions, decimals, percents, and the whole-number system. Fraction and whole-number algorithms are extended to include addition and subtraction of fractions with unlike denominators, and long division with 2-digit answers. Problem-solving skills are extended to multi-step problems, data interpretation and graphing, and complex proportions. Level E also establishes connections between the coordinate system, ratio and proportions, and geometry.

Components

Compelete Set of Teacher Materials for each level contains 1 Teacher's Guide, 1 Teacher Presentation Book, and a separate Answer Key. Student materials include a textbook and workbook. Student materials must be ordered separately.

Connecting Math Concepts, Level D
Grade 4

7-15647	Level D Connecting Math Concepts Complete Set of Teacher Materials	$154.00
7-15643	Student Workbook (pkg of 5)	26.35
7-15644	Student Textbook	16.85
7-15656	Additional Answer Key	12.90

Connecting Math Concepts, Level E
Grade 5 (Available late summer 1993)

7-15667	Level E Connecting Math Concepts Complete Set of Teacher Materials	$154.00
7-15663	Student Workbook (pkg of 5)	26.35
7-15765	Student Textbook	16.85
7-15666	Additional Answer Key	12.90

SRA

Macmillan/McGraw-Hill
PO Box 543
Blacklick, OHIO 43004
Phone: 1-800-843-8855
FAX: 1-614-860-1877

ADI MATERIALS PRICE LIST

Theory of Instruction (1991)
by Siegfried Engelmann & Douglas Carnine
Membership Price: $32.00 List Price: $40.00 _____

Direct Instruction Reading (Revised, 1990)
by Douglas Carnine, Jerry Silbert, & Ed Kameenui
Membership Price: $32.00 List Price: $40.00 _____

Direct Instruction Mathematics (Revised, 1990)
by Jerry Silbert, Douglas Carnine, & Marcy Stein
Membership Price: $32.00 List Price: $40.00 _____

Teach Your Child to Read in 100 Easy Lessons (1983)
by Siegfried Engelmann, Phyllis Haddox, & Elaine Bruner
Membership Price: $15.00 List Price: $19.00 _____

Structuring Classrooms for Academic Success (1983)
by Stan Paine, J. Radicchi, L. Rosellini, L. Deutchman, & C. Darch
Membership Price: $11.00 List Price: $14.00 _____

War Against the Schools' Academic Child Abuse (1992)
by Siegfried Engelmann
Membership Price: $14.95 List Price: $17.95 _____

Becoming a Nation of Readers (1985)
The Report of the Commission on Reading
Membership Price: $4.00 List Price: $5.00 _____

Beginning to Read: Thinking and Learning About Print (1990)
by Marilyn Jager Adams (A summary by the Center on Reading)
Membership Price: $6.00 List Price: $7.50 _____

Subtotal _____

Postage & Handling: If your order is		
	$0.00 to $20.99	$4.00
	$21.00 to $40.99	$5.50
	$41.00 to $60.99	$7.00
	$61.00 to $80.99	$8.50
	$81.00 or more	$10.00

P & H _____

ADI Membership _____

Total _____

Send to: **ADI • PO Box 10252 • Eugene, OR 97440**

Join the Association for Direct Instruction

Membership Options:

A) Regular Membership: $15.00 per year (includes one year of *DI NEWS* and a 20% discount on ADI sponsored items and events).

B) Student Membership: $7.00 per year (includes one year of *DI NEWS* and a 40% discount on ADI sponsored items and events).

C) Sustaining Membership: $30.00 or more per year (includes regular membership privileges and recognition of your support in the *DI NEWS*).

D) Institutional Membership: $50.00 per year (includes 5 subscriptions to the *DI NEWS* and membership privileges for 5 staff people).

E) *DI NEWS* Subscription only: $7.00 per year (outside North America and Hawaii $10.00 per year).

ADI sponsored products and events include books and other materials published or marketed by the Association for Direct Instruction. The ADI NEWS is published 4 times a year (Fall, Winter, Spring and Summer).

To join the Association, complete the bottom portion of this form and mail it, with your check or Purchase Order (in U.S. funds) to the Association for Direct Instruction.

Check one:

I wish to become an Association member. Please enroll me as a:

_____ Regular Member ($15.00 annually)
_____ Student Member ($7.00 annually)
_____ Sustaining Member ($30.00 or more annually)
_____ Institutional Membership ($50.00 annually)
_____ I wish to subscribe to the DI NEWS only ($7.00 annually; $10.00 outside North America & Hawaii)

Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

School District or Agency: _____

Position: _____

ADI
P.O. Box 10252
Eugene, OR 97440