

# ADI NEWS

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## Personal Profile

### Siegfried Engelmann - Prophet or Profiteer

Loring Brinkerhoff  
University of Wisconsin-Madison

Siegfried Engelmann is currently professor of special education at the University of Oregon and co-director of the Direct Instruction Follow Through program. Although he holds neither a masters nor a Ph.D., Engelmann is considered by many to be one of the most brilliant educators of our time. Bateman (1969) noted that all of us who have watched the Bereiter-Engelmann program grow and have seen the children in the program become smarter and happier about themselves, stand in awe of Engelmann's approach to teaching. Numerous other educators still have only "grudgingly accepted his approach" to teaching mildly handicapped children (Boyd, 1977). Engelmann's divergent interests include programs in reading, arithmetic, language, spelling, handwriting, and creative writing; tactical "hearing" programs for deaf children; and instruction games and tests. He is senior author of nine DISTAR programs, six Corrective Reading Programs, the SRA Math Modules, and the six-level Mastery Reading Series. Engelmann's primary interest is in the analysis and psychology of instructional design. Much of his pioneering work in this area is co-authored with Professors Douglas Carnine and Wesley Becker from the University of Oregon. Engelmann and Carnine's epic *Theory of Instruction*, though only recently released, is already commanding careful attention in educational circles.

#### Preventing Failure

Engelmann's interest in tightly sequenced instruction was rooted in his observations of mildly handicapped children who were failing with conventional curriculum materials. Explanations for failure were typically placed solely on the student. He found that "inclusive explanations" for student failure were focused in vague educational descriptions like "sensory deprivation," "readiness training" or "perceptual motor deficits." Engelmann (1969) believed that these assumed causes for student failure told the teacher "precisely nothing that was directly relevant to teaching." Unlike his predecessors, Engelmann placed the responsibility for

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SIEGFRIED ENGELMANN

### DI Follow Through Students Show Fewer Dropouts, Fewer Retentions, and More High School Graduates

Russell Gersten and Tom Keating

Project Follow Through began in 1967, at the height of Lyndon Johnson's presidency; it was the largest, most expensive educational or social experiment ever undertaken by any government. Since then, almost half a million students from low-income families have been enrolled in Follow Through classrooms at a cost of 700 million dollars. Over 180 low income communities have been involved, ranging from inner city areas in New York, Washington, D.C., and Philadelphia; to Native American towns such as Cherokee, North Carolina, to obscure rural areas like Flippin, Arkansas, and Williamsburg County, South Carolina. (The latter is the poorest county in the contiguous 48 states, with median yearly income of approximately \$2,400 for a family of five.)

The purpose of Follow Through was to continue to build on the academic and social gains made by Head Start, by providing exemplary educational programs for disadvantaged students through third grades. Twenty universities and educational laboratories were funded to test model programs. Each university or lab served between 1 and 20 communities. These models represented the entire range of approaches to early childhood education. Models ranged from the Bank Street College of Education's psychodynamic approach—where children learn to read by being provided with an environment that stimulates them to want to read—to the University of Oregon's Direct Instruction Model (developed by Siegfried Engelmann and Wesley Becker), which used programmed, highly structured, small group instruction.

## This Issue of ADI NEWS Goes to 30,000

The Association of Direct Instruction was started nearly two years ago. At the end of summer conference, we had a little over 200 members. A year later at the same time we were up to 680 members. Our goal this year is to reach 1500 by September. To that end we are using this SPECIAL SPRING ISSUE to tell more teachers, administrators, and professors about us. We will be mailing to 25,000 directly, and we will distribute another 5000 copies of this issue through conventions and friends.

ADI is a not for profit corporation dedicated to the dissemination of training, program, and research information on the systematic application of learning technology to the problems facing education—and especially the promising technology of Direct Instruction represented by the work of Siegfried Engelmann. The Association publishes this NEWS four times a year (Fall, Winter, Spring, and Summer). So far, issues have been 16 pages long, except for this special promotional and conference issue. We expect to follow this pattern in future years. Those who join

at this time will receive issues through Summer, 1984 for the annual fee.

Besides publishing the NEWS, the Association sponsors workshops, makes DI related books available to members at discount, provides informational services to members, runs a preschool for handicapped children, and will provide training services to school districts at a reasonable fee plus expenses. In the coming year we hope to prepare several booklets made up of collections of research, training, or supervision related articles published previously in the NEWS.

During the past year, workshops were held by ADI in Eugene and San Diego. The Western Michigan group, under Galen Alessi, independently held a DI training workshop in Kalamazoo, MI., and the Australian Association for Direct Instruction under Alex Maggs and Joe Moore held their third workshop in Sydney. Planned for this summer are workshops in Eugene, San Diego, Albuquerque, and Kalamazoo (see announcements in this issue.)



RUSSELL GERSTEN

Unlike Head Start, a large proportion of the Follow Through budget went to evaluation and research. The Office of Education always looked at Follow Through as a "laboratory" to see which of these innovative approaches actually worked the best in real world situations. A massive, longitudinal evaluation was conducted from 1970 to 1976 to evaluate the 10 major models. The results, published in 1977, were very controversial. Essentially, the structured approaches, in particular the Direct Instruction Model, were the most effective

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Dear Editor:

I'm just a mom who is absolutely sold on DISTAR. Approximately two years ago, I read Siegfried Engelmann's book "Give Your Child a Superior Mind." My oldest son was almost four at the time so I taught him how to read with my own homespun phonetic approach which I sort of dreamed up as I went along. A few months later, I found DISTAR. Of course, being a mom, I found it hard to accept the scripted lessons, so I improvised with just the workbooks, readers, and teacher's guides. (I know that's absolutely unthinkable—but it was that or nothing at all, considering that my husband didn't put the same value on DISTAR that I did. However, I have since found that with bright, even very young children, it works very well.)

Anyway, when I began teaching my son the DISTAR Arithmetic, he was just 4 years old and couldn't tell a 6 from a 9. With 9 months, and while he was still 4 years old, he was doing simple multiplication of fractions, word problems, telling time, subtracting with borrowing, adding with carrying, doing double digit multiplication, and single digit division. Not only so, but he was reading DISTAR level 3 readers (the old ones with the science in them). When he was 5, he scored 150 on a Stanford-Binet and he is now a kindergartener in a kindergarten, first, and second grade combination class for highly gifted children.

However, more impressive to me is that when I found DISTAR I began teaching my younger son to read, using the readers and workbooks. He was turning 2 years old when I began. At 2 years and 4 months he was reading the level 1 readers fluently. He is now 3 years old and can easily read level 3 DISTAR. Not only so, but I feel he reflects that a better method was used to teach him than to teach my older son. His decoding is very sound and instantaneous—much more so than my older son's had been when he was reading at the same level, even though my older

son was a year older at the time.

Many of my friends have been inspired by my boys to do the same with their bright preschoolers, and they are having similar, though not quite so dramatic, results.

Anyway, needless to say, the teaching of reading has become my avocation and I am on the bandwagon for DISTAR. I talk to every educator I can, write letters to the newspaper, the school superintendent, etc. In general, I make a real pest of myself, naively hoping that someday the schools will act intelligently and adopt DISTAR program. This is why I'm writing you. Today I received my first copy of DIRECT INSTRUCTION NEWS and it said that you would be happy to send copies to those who would circulate it. Please send me some copies to circulate. If they are free, I would be happy to circulate around 20 copies.

Angelica Fazio  
San Diego, Calif.

Dear Mrs. Fazio:

Your letter is truly inspiring. The Association Board has been hoping to establish a parent membership group for the Association and to include more features for parents in the NEWS. Parents can join now at the regular membership fee (\$15), or can take the NEWS-only option (\$5). However, I want you to know that we will provide free memberships to truly needy parents concerned about their children's education (as long as we don't go broke). Twenty copies of this special Spring issue are on their way to you.

You will note that there is an ad in this issue for Engelmann and Haddox's new book for parents, *Teach Your Child to Read in One Hundred Easy Lessons*. The book is published by Simon and Schuster and should be at the local bookstores soon at \$14.95. Maybe the Association can get some training sessions going for parents using this book as the starter.

Wes Becker  
Editor

The Direct Instruction News is published Fall, Winter, Spring and Summer, and is distributed by mail to members of the Association for Direct Instruction. 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.

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# ADI Board Offers New Services for ADI Members

Effective immediately, ADI has several new services available to its members. These include a "DI Hotline", a tape review and feedback service, and the availability of experienced DI Trainers/Consultants for inservice training in your area. These services are offered to give present members even more value for their money and to attract new members. The services are being offered on a trial basis and will be monitored for cost, use, and consumer satisfaction. If, after a period of time, we find that the services are being used and that we can offer satisfactory services at an affordable price, the services will be made permanent. Each of the services is described briefly.

## DI Hotline

Several people have suggested that we establish a "DI Hotline". The initial suggestion was for a toll-free line, and we would like to offer this service on such a basis. But the costs of such a service would surpass our payroll—it would break our bank in a month. Instead of a toll-free line, we have initiated the next best alternative. The service consists of a 24-hour telephone answering/message reception arrangement. The service will be available continuously from 9:00 a.m. Monday through 4:00 p.m. Friday, Pacific time. It will be turned off on weekends and holidays. The service allows you to phone in any question you have about the use of Direct Instruction at any time that is most convenient and/or least costly for you to do so. If no one is available to take your question when you call, you may leave a message on a recording device. The next working day, your message will be given to someone who can answer it. This person will call you back or write you with an answer to your question. Every effort will be made to do this within a day of your call. We cannot afford to accept collect calls, but the 24-hour nature of our service allows you to call at a time when the rates are cheapest in your area. We hope this service will allow you to get quick answers to your Direct Instruction questions in a way that is both satisfactory and affordable. Call 503-485-1293.

## Tape Review and Feedback

Occasionally, someone asks us for "long-distance supervision" of their Direct Instruction lesson presentations. While live observation and feedback are best for supervision purposes, they are often not possible. As an affordable alternative, we are now piloting a tape review and feedback service. Here's how the service works.

Tape one of your presentations from any of the Direct Instruction programs you teach on a cassette. Send this tape along with a blank cassette to ADI. Enclose a note with your name, address, and a few words about anything in the lesson you might have been having particular difficulty with or that you especially want feedback on. An ADI approved trainer/consultant will review your tape and record his/her feedback on the blank tape, then return both tapes to you. Please do not send us more than one lesson per tape. You should include all parts of the lesson on which there is oral student responding, including the

teacher-led portions of DISTAR take-homes.

This service will require a considerable amount of consultant's time. Thus, we must initially charge \$15 per taped session to compensate consultants for their time and effort. We will review this service and our pricing structure within several months to assess the feasibility of continuing the service.

## Training/Consulting Services

Many of the people who act as trainers at Direct Instruction conferences also do training and/or consultation on a fee-for-service basis for local or county school systems. Training on virtually any of the topics offered at conferences or any of the Direct Instruction programs can be purchased through ADI. Costs range from \$200-500 per day, plus expenses. The exact cost depends on the topic and the trainer. For more information on training/consultation services available through ADI, contact us at P.O. Box 10252, Eugene, OR, 97440 or call us at (503) 485-1293.

We hope that you use these services, and we hope that you find them useful. We welcome your comments on them, and we invite your suggestions on other services which you would like to see ADI provide to its members.

## DI Gaining Momentum in Southern Alabama

By Marie Scott

Mobile County Public Schools

DI is "the new kid on the block" in the Mobile County Public School System. A DI interest group has been formed and is meeting on a monthly basis. The purpose of the meetings is to provide interested individuals an opportunity to secure information on the origin, structure, instructional implication, and potential impact on student achievement of Direct Instruction. The current membership includes approximately twenty central office and local school administrators, staff development supervisors and trainers, and classroom teachers.

There is an obvious need among educators in our region for indepth understanding of the components of DI and curriculum which contribute to its effectiveness. In addition, a strong interest exists in acquiring the expertise necessary for adapting traditional curriculum materials to increase their effectiveness.

Surprisingly, getting educators interested in programs has been easy. When a teacher or administrator walks into a DI classroom and sees a teacher with a group of previously low-achieving students (who everyone knows "can't learn to read") moving briskly through a reading or math activity with every child attending, responding, and "getting it right", they immediately get interested. The hard part

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# Teaching Comprehension Skills

Reported by Wes Becker

This report is a summary of a study by Ed Kameenui, Doug Carnine, and Alex Maggs entitled: Instructional procedures for teaching reversible passive voice and clause constructions. It was published in *The Exceptional Child*, 1980, 27, 29-40. Quotes are made with permission of the authors.

The study examined the effectiveness of providing a Direct Instruction strategy for teaching three children to correctly interpret passive voice constructions and clause constructions. The study was designed to use each subject as his own control.

The students were a boy and a girl in third grade, and a boy in fifth grade. Two were called learning disabled and one mildly handicapped.

In the first stage of the study, students were screened with a reading test consisting of four 60 to 80 word passages on each of two days. Each passage included two passive voice constructions and two clause constructions. Students were not taken into the study if they answered three or more of the four questions for any passage correctly.

A baseline condition followed the screening. This was basically a practice condition. Each day, in 20 minute sessions, the student would read three passages and answer four questions about each. For the first two passages, they would be told if their answers were right or wrong. For the third (the probe), they were given no feedback.

A Direct Instruction training condition followed the baseline. Prior to reading a passage with two passive voice constructions and two clause constructions, pre-passage training was given first on passive voice constructions and then on clause constructions. When a mastery level was reached, passages

were presented and test questions were used to probe performance.

The training procedure for passive voice constructions was as follows:

1. Experimenter: Listen, I'll read a sentence and you follow along: Gronk was teased by Bubbles. I can say it another way. Listen: Bubbles teased Gronk.
2. Experimenter: I'll say the sentence again. Gronk was teased by Bubbles. Now you say the sentence the other way. Child: Bubbles teased Gronk. If the child made an error, the Experimenter stopped the child and modelled the response as in step 1. The Experimenter then tested the child on step 2. Steps 1 and 2 were repeated with three new sentences. (Steps 1 and 2 were faded when the child reached 50 percent level of correct performance on the questions.) After steps 1 and 2 had been completed with all four sentences, steps 3 to 5 were presented with all four sentences.
3. Experimenter: Now I'm going to say a sentence and ask you a question. Listen: Gronk was teased by Bubbles. Now say it the other way to yourself.
4. Experimenter: Who did the teasing? Child: Bubbles.
5. Experimenter: Who got teased? Child: Gronk.

The training procedure for clause construction was as follows:

1. Experimenter: I'll read the first sentence; you follow along. "Henry, who kissed Joan, ran home crying." (Experimenter points to *who*.) Listen, *who* stands for Henry. So I can say two sentences for this one: Henry kissed Joan. Henry ran home crying.

2. Your turn. You read the sentence. (The child reads the sentence aloud.) What does *who* stand for? Child: Henry.
3. Experimenter: So, tell me one sentence you can say. Child: Henry kissed Joan. (If error, Experimenter models step 1, then tests on step 2.)
4. Experimenter: Now, tell me the other sentence. Child: Henry ran home crying. (If the child made an error, the Experimenter repeated step 1 and also crossed out "who kissed Joan" so the construction would look like, "Henry, ~~who~~ *kissed Joan*, ran home crying." The Experimenter continued the correction by repeating steps 2-4.)
5. Experimenter: Now say two sentences for this one. Child: (reads construction) Henry kissed Joan. Henry ran home crying.

Steps 1 to 5 were repeated with two other clause constructions. Subsequent to this, the following instructions were presented for each construction.

6. Experimenter: Listen, now I'm going to say a sentence and ask you some questions. Listen, "Henry, who kissed Joan, ran home crying." Now, say two sentences to yourself for that one. (Pause)
7. Experimenter: Who did the kissing? Child: Henry.
8. Experimenter: Who ran home crying? Child: Henry.

The next condition eliminated the pre-passage training, and present passages only, followed by test questions.

A summary of the results is given in Tables 1 and 2. The Direct Instruction pre-passage training produced gradual, but systematic improvement for all three students.

## Corrective Reading Evaluated in Birmingham, England

Reported by Wes Becker

*The British Journal of Educational Psychology* (1982, 52, 33-50) recently published a study by R.P. Gregory, C.S. Hackney, and N.M. Gregory, evaluating SRA's Corrective Reading Decoding Program, Level B. While the authors had a number of problems installing the program, the initial findings, under somewhat difficult circumstances, led to program continuation into a second year.

Most of the experimental and comparison students placed into Decoding B on the placement test. The program was taught 4 days a week for 5 months to the experimental group of 11 students. The comparison group of 8 students used the school's established remedial program, with the experimental group teacher leading the group on 2 days and another teacher instructing on the other 2 days. The groups were comparable on all variables except sex. There were more girls in the experimental group (7), and more boys in the comparison group (6). The experimental group covered 26 lessons in the 57 days of instruction. Because of a lack of adults to listen to individual-oral-reading checkouts each day, the teacher used every other lesson to do these checkouts. Scheduling problems also made it necessary to give each group two lessons on one day. The average age of the students was 11 years, 10 months.

Even with the reservations which must be made about the few lessons taught, the use of two teachers for the comparison group, and the sex difference, the results of this study are striking. Using the Daniels and Diack test of reading experience, a group test demanding skills in decoding and comprehension, the experimental group grew in reading age from 8.3 to 10.0 years (a mean gain of 1.7 years). The comparison group gained in reading age from 7.85 to 8.08 (a mean gain of .23). The difference was very significant (.001 level).

School attendance for the experimental group was 90% at pretest and 96% at posttest. For the comparison group, the attendance percentages were 88% and 89%. The posttest difference on attendance was significant (.05 level). The students' problem behaviors were rated by English and Math teachers on the Rutter Children's Behaviour Questionnaire. Scores for the experimental group went from a mean of .73 to .91, pretest to posttest. For the comparison group, they went from 1.12 to 3.75. The posttest difference was highly significant (.01 level), indicating the Corrective Reading group was better behaved.

The gain of 1.7 years in 57 days of instruction offers strong support for the Corrective Reading Decoding B program.

## Alabama

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comes when you try to get the same person to make a long-range commitment to learning and using DI strategies as their own basic means of teaching. This is the goal of the initiators of this interest group.

To have a serious impact on a system the size of Mobile's (approximately 66,000 students) will take far more than the purchase of a few scripted reading programs or even an administrative mandate.

Logically, the question arises, "How can a small interest group, beginning with 20 individuals, possibly bring about change?" The Mobile County Public School System is a rapidly growing, urban system in a historically rural, agriculturally-oriented state. It is understandable that large-scale changes in educational philosophies, policies, and practices occur slowly. With the continued encouragement from individuals who know and believe in Direct Instruction, and with the continued enthusiasm which occurs everytime our group gets together and shares experiences, we will be able to spread our word to others who will join with us and create the impetus needed to bring about the desired changes.

Table 1								
Means and Standard Deviations of Probe Questions Correct for Probe Stories Involving Passive Voice Constructions Only Across Subjects								
Subject	Screening*		Baseline		Pre-passage and Passage Training Only		Passage Training Only	
	x	SD	x	SD	x	SD	x	SD
1	1.5	.58			1.75	.45	1.84	.37
2	1.0	0	1.0	.74	1.80	.45	1.70	.47
3	.25	.50	1.29	.63	1.58	.51	1.78	.44
* Maximum score possible = 2								

Table 2								
Means and Standard Deviations of Probe Questions Correct for Probe Stories Involving Clause Constructions Only Across Subjects								
Subject	Screening*		Baseline		Pre-passage and Passage Training Only		Passage Training Only	
	x	SD	x	SD	x	SD	x	SD
1	.25	.50			1.25	.75	1.74	.56
2	.50	.58	.50	.80	1.60	.55	1.70	.57
3	.50	.58	.75	.68	1.42	.51	1.89	.33
* Maximum score possible = 2								



# DI Improves Drawing Skills with

By Edward V. Sims, Jr.  
Paul Weisberg  
Connie Sulentic

Early Childhood Day Care Center  
University of Alabama

Direct Instruction has been advocated for use in early childhood education to give disadvantaged children a head start in educational experiences (Bereiter & Englemann, 1966). Critics claim that when this is done, too much emphasis is placed on academic skills to the detriment of "creative" skills, such as drawing, painting, and other expressive activities. One reply to this criticism is that, with the limited amount of instructional time in a preschool day, those basic skills which serve as the building blocks for later academic success should be given priority over less academic activities. But academic and expressive activities are not necessarily mutually exclusive or incompatible. In fact, they may, in a sense, be related. Since DISTAR-trained preschoolers are adept in using pencils and in writing letters, numerals, and other symbols (Sims & Weisberg, 1982a), the question can be raised if other written productive skills, such as drawing pictures, can be facilitated.

The component skills for the construction of simple freehand pictures have not been seriously examined. Yet, one important determinant is knowing the major attributes or details of the object to be drawn. In this respect, the DISTAR Language program provides tasks in identification and naming of the relevant attributes of many common objects through the part-whole and action formats. Other important determinants of drawing skill are the opportunity to practice drawing both separate attributes and interconnections among them to form the entire object, and receipt of corrective feedback during the drawing process. Rules governing the sequence of the forms to be created and techniques for creating special effects, such as sad eyes or a moving object, are possibilities to consider for more advanced preschool drawings.

The Early Childhood Day Care center (Weisberg, 1981) is a Direct Instruction preschool for disadvantaged children located on the University of Alabama campus. Here, we investigated children's drawings and compared them to the drawings of children from other preschools. Drawings were obtained to determine whether the academic priority of the ECDCC would place the preschoolers at some disadvantage in a self-expressive activity, such as producing art forms.

Drawing pictures of people was chosen as the evaluative task for four reasons. First, these forms are easily scoreable in terms of the number and quality of body parts included; in fact, there are objective and standardized scoring systems available (Harris, 1963). Second, an examination of preschool books and manuals reveals that learning about various body parts is an ubiquitous preschool activity, no matter what the preschool philosophy may be (Brophy, Good, & Nedler, 1975; Weikart, Rogers, Adcock, & Mc-

Clelland, 1971). Third, many preschools provide a cluster of activities that include practice in putting together body parts to form people (e.g., flannel boards, puzzles, cut-and-paste activities). Fourth, there is usually opportunity in preschools to engage in self-expressive art forms involving people, such as making freehand drawings of them on the chalkboard or on paper during easel painting, finger painting, and so forth.

## Subjects

A total of 66 economically disadvantaged children, from three local preschool programs and a no-preschool comparison group, were sampled. The SES characteristics of each group are reported elsewhere (Sims & Weisberg, 1982b); in summary, the children were educationally-at-risk and had the same poverty level attributes of preschools reported in other studies (Gray & Klaus, 1970; Schwienhart & Weikart, 1980). Each group was subdivided into children having one year versus two years of preschool experience. The one-year group were of kindergarten age (K-age) and the two-year of first grade-age (1st grade-age). Figure 1 shows the sample *N* and mean age in months for each of the eight subgroups. No child with obvious sensory or motor handicaps was tested; two with measured IQs below 75 were tested, but excluded from this study.

## Preschool Experiences

Two of the programs, Direct Instruction and Child Development, contracted with the State agency for public welfare to provide services to poverty level

parents whose children were in need of full-time, year-round day care services. Assignment of children to these programs was done by caseworkers at the local welfare agency on a random, first-come, first-served, basis. The third preschool experience was a local Head Start program. All three preschool programs had been in existence from eight to ten years and all enrolled children with the same kinds of backgrounds and geographical locations.

The fourth group consisted of children who had never attended a preschool. These No Preschool children were located and evaluated during the beginning months of public school kindergarten and/or first grade in September or October 1980. Consequently, 1st grade-age No Preschool children were several months older at the time of testing than the three groups of children attending preschool who were tested during April or May 1980.

## Program Descriptions

**Direct Instruction.** Classes in DISTAR language, reading, and math were held daily for 45 minutes each. Of relevance here are the language program formats which presented body parts in part-whole object identification tasks, as well as in tasks involving actions, "a/an" discriminations, prepositions, plurals, tense, "some/all/none," and "same/different." Other tasks, that could be related to making detailed drawings of people, involved the classification, use, and part-whole relationships of articles of clothing. Some take-home exercises required tracing over missing dotted

body parts that "needed fixing." However, this was confined to major facial features and limited only to the beginning exercises.

No daily arts and crafts classes were provided, although several chalkboards were available during two 20-minute semi-structured play activities. In addition, after the children finished their independent seatwork exercises in each of the three content areas, the teacher permitted drawing and other cushion activities, such as coloring, writing stories, reading books, etc. Records of the kinds and frequency of drawings were not kept.

**Child Development.** As a typical structured cognitive program (Weisberg, 1983), this preschool presented a daily mixture of structured and non-structured activities. A unit-based curriculum was used to teach language and preschool concepts, brought together under a common cognitive theme and taught for 15-30 minutes per day. Each unit could last for several weeks. The unit devoted to body parts taught such skills as identification and naming of body parts, major functions of several parts, pluralization, counting fingers, and comparing human parts to those of animals. Body parts were emphasized in songs and stories. Arts and crafts were taught for about 20 minutes, three-to-four times per week. During the body parts unit, children engaged in art activities, such as affixing pre-cut parts to a flannel board, cutting out and pasting paper body parts, tracing body outlines, and so forth.

**Head Start.** Also a structured cognitive program, the Head Start Center used the Peabody Kit (Dunn and Smith, 1976) for concept and language development. October was set aside as "body part month," providing a four-week thematic unit during which related language concepts were taught for 15-30 minutes per day. Children also received daily arts and crafts classes. More time was spent on free-play than in the other two programs.

## Procedure and Assessment of Drawing Quality

Drawings were assessed by the Goodenough-Harris Drawing Test (Harris, 1963), commonly called the "draw-a-man" test. This test was standardized on a sample of nearly 3,000 children with about 300 children in each of ten age groupings, from five to fifteen years. The final standardization group, selected from four major geographical areas, represented the national distribution with regard to 1950 paternal occupation measures. The test has been shown to be a reliable instrument, with internal consistency reliabilities (split-half correlations) of .70 to .80, and a test-retest reliability of .60 to .70. Reported interscorer reliabilities were generally over .90.

The children were tested individually and instructed, "Draw a picture of a person; draw the best picture of a person that you can." After completion, they were asked if it was a boy (man) or a girl (woman). Limited time dictated the necessity of a single drawing, although the test suggests the drawing of both a man and a woman. Separate scoring criteria are given for male and female

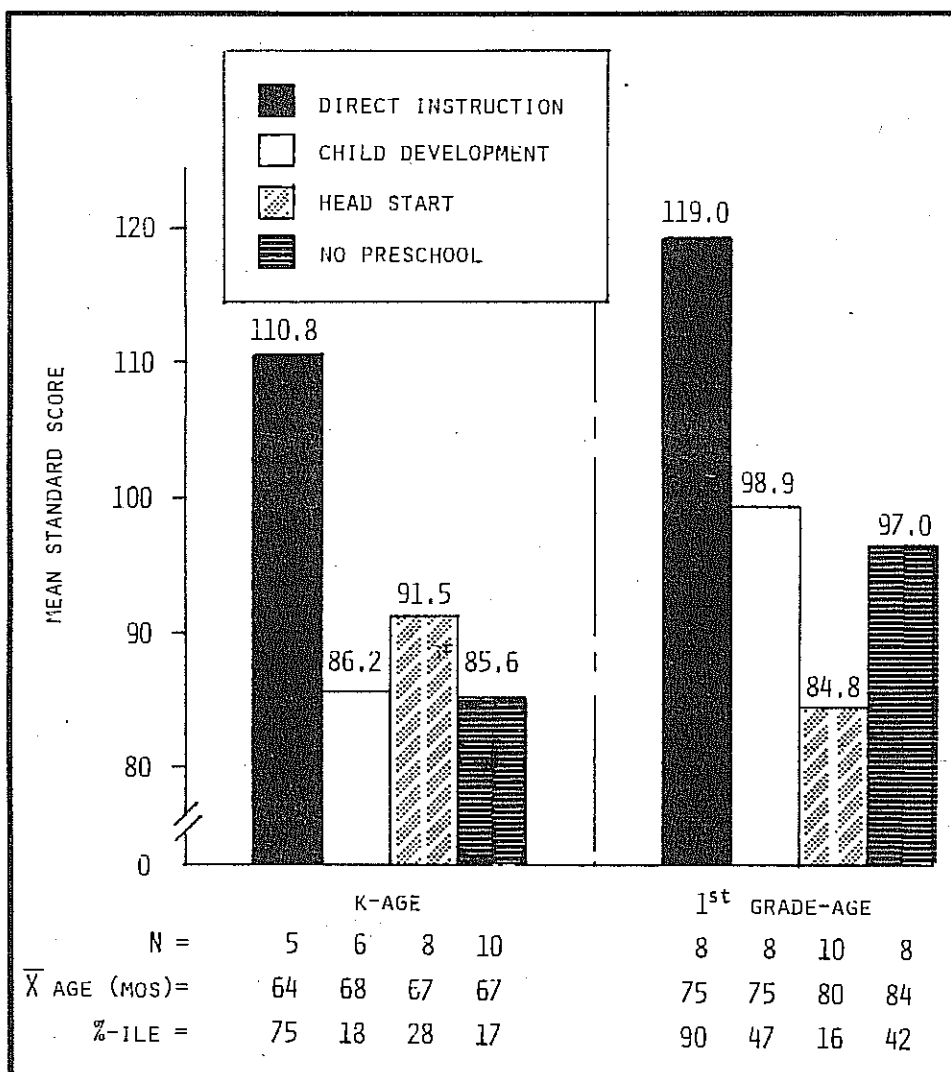


Figure 1. Mean Standard Scores for the four types of preschool experiences at kindergarten and 1st grade-age. A Standard Score of 100 represents performance at the 50th percentile.

# Preschoolers

figures; as long as the drawings are scored by the appropriate sex criteria, it does not matter whether the child chooses to draw a man or a woman.

## Interscorer Reliability

A second scorer independently evaluated a random selection of twenty drawings. A high (.94) rank-order correlation between the two sets of scores was found.

## Results and Discussion

Raw scores were converted to standard scores appropriate to the child's age group. Figure 1 shows the mean standard scores for K-age and 1st grade-age children from each of the four preschool conditions.

Statistical analysis, based on a  $2 \times 4$  analysis of variance, indicated a significant difference between the four groups. The Direct Instruction children scored significantly higher ( $p = .05$ ) than the other groups, both at the K-age and 1st grade-age level. The Direct Instruction children included more detail, that is, more body parts, in their drawings. Readers must determine for themselves if there is really a visible difference in drawing quality. The median drawings for each of the four groups of first grade-entering children were selected and are shown in Figure 2. Clearly, there is a substantive difference in the amount of detail included. It is left to the reader to conclude whether the additional detail implies greater drawing sophistication.

We cannot say from this analysis whether Direct Instruction and non-Direct Instruction children differ in artistic skill. The Draw-A-Man Test focuses more on attention to detail than on artistic quality. Nevertheless, it seems apparent that the children in Direct Instruction programs are at least no worse in their representations of the human form, in spite of their comparatively limited practice in a diverse set of art-related activities.

It is possible that the language concepts taught in Direct Instruction somehow helped to facilitate the acquisition of productive drawing performances. If such is the case, it is understandable how body parts taught through actions, part-whole relationships, tenses, etc., might appear in children's drawings. This possibility definitely merits further investigation, either with a larger sample in a between-group design or with several children in a within-subjects design. In the latter case, one might directly teach certain parts of various objects to see if the taught parts appear in children's drawings of those objects.

Finally, whereas there is presently no Direct Instruction art program, it is interesting to speculate on what types of products such a program might produce. Craig (1979) reports that children in the People's Republic of China are directly taught to imitate skills in paper cutting and painting with great precision; the resulting artwork is finely detailed. Such instruction may have played a role in the development of the intricate, highly stylized characteristics of oriental art. This is not to suggest that Direct Instruction of art would produce only imitative work. Weisberg (1982) has shown how Direct Instruction in language, reading,

spelling, and writing descriptively about scenes in pictures can lead to some highly creative story-writing by preschoolers. Surely the same creativity is attainable with Direct Instruction in art.

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## Teacher to Teacher

by Jane M. Dougall Coté Whiteaker Community School, Eugene, Oregon

## What To Do Until Spring Comes

As winter lingers on and spring seems never to come, I find it difficult at times to psych myself up for the daily routine of teaching. The thrill of September, with its new challenges, has passed. The motivation of the year's end is still

several months off. I suspect that other teachers sometimes feel this same way and I therefore offer some suggestions which I hope will add a new spark to your classroom.

1. Start a plant corner. Bring in some plants from home. Start some plants from seed. Teach your students the parts of a plant. Include the botanical names in spelling lists. Work on a mural illustrating the stages of plant growth.

2. Change the location of your reading group so that you can look outside. If you don't have a view, hang ski posters on an opposite wall.

3. Read to the students Shel Silverstein's poem, Sarah Cynthia Sylvia Stout Would Not Take the Garbage Out (Silverstein, Shel. *Where The Sidewalk Ends*. Harper & Row, 1974.) and have students draw pictures of their images or dramatize the poem.

4. Videotape yourself teaching. Critique the tape yourself or ask a colleague to give you feedback. Show the tape to students as a reinforcer for them (most kids love to see themselves on television).

5. Teach students to operate the video equipment. Put on a television show complete with commercials. Incorporate writing and art wherever possible. Invite parents and administrators to view the show. Take a field trip to a local television station as a follow up.

6. Start a new classroom motivation program to improve seatwork behavior and performance on worksheets.

7. Trade an instructional group with a teacher at a different grade level. It will give each of you a challenge and encourage communication across grades.

8. Start a monthly newsletter to parents. Include a brief description of what students have been learning and how parents can follow-up on this material at home. Have students write some articles or illustrate the newsletter.

9. Do a "hands-on" science activity. Have students role play how to explain the activity to their principal or parents.

10. Set up some learning centers in your room. Start small. Be specific about rules for use of the center and be prepared to spend time praising appropriate behavior.

After reading these ideas, feel free to expand them. Let me know how they worked for you. If you have additional ideas to spark up the classroom, why not share them? I will use your ideas in a future article. While it is sometimes hard to maintain our enthusiasm for teaching with winter dragging on, if we exchange some of our ideas, I'll bet we can keep the spark alive until the first rays of spring begin renewing our energy and enthusiasm.

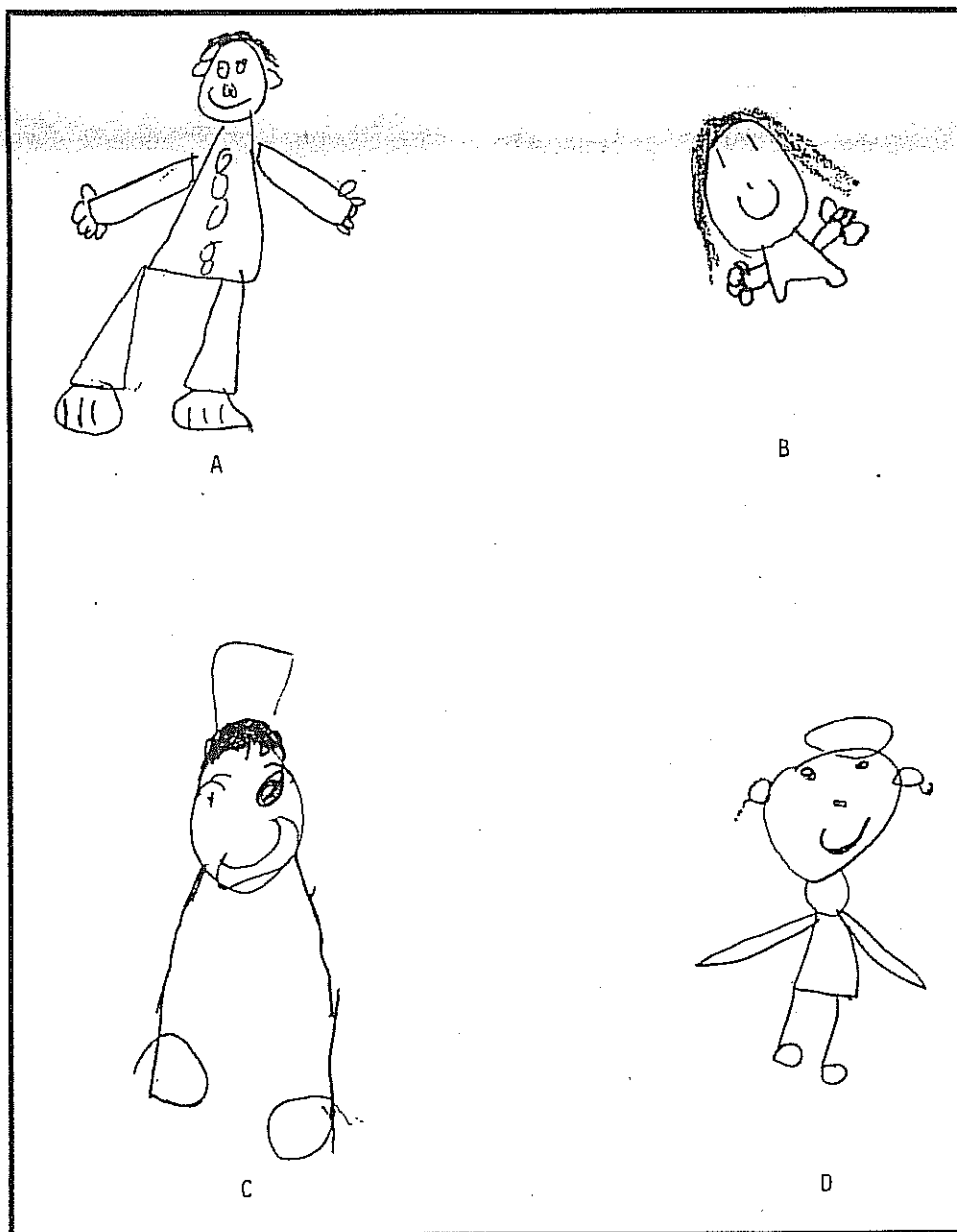


Figure 2. Median drawings by 1st grade-age children in the four preschool conditions: A. Direct Instruction (Standard Score for this drawing = 120); B. Child Development (SS = 88); C. Head Start (SS = 78); and D. No Preschool (SS = 92).

# Teaching Nutritional Values to Preschoolers with DI

By Michael F. Masters, Daniel V. Mc Callum, and Paul Knight II

Foundation for Behavioral Research  
Kalamazoo Intermediate School District  
Kalamazoo, MI

In the last decade, considerable evidence on the effects of certain dietary habits on health and degenerative diseases (heart disease, arterial problems, cancer, etc.) has been acquired. The Senate Select Committee on Nutrition and Human Needs reported on the relationship between certain diets and the occurrence of these degenerative diseases. Perhaps more importantly, it stated that the average American diet has evolved in recent years in the direction of less healthy foods. The committee's report recommended that people consume relatively more complex carbohydrates (fresh fruits and vegetables, whole grain products, and legumes) and relatively less fats, simple carbohydrates (sugar), and salt than they consume now as a means of prevention. This report generated considerable controversy in the food industry and in the medical community. Consequently, it received little publicity. However, the importance of nutritional awareness had not been overlooked by nutrition educators. Instruction at a young age, specifically Direct Instruction, was one of the methods we chose to effect the changes in diet suggested by the Senate Select Committee.

The project described in this article was entitled "Developing a Health-Oriented Lifestyle in Children" (Note 1). The purpose of this three-year project was to develop and validate strategies to teach young children prohealth lifestyles in the areas of nutrition, harmful substances, and health advocacy within a self-management framework. Our goal was to develop a preventative health package based on the premise that many health behaviors are learned at a very early age, and that teaching healthy habits at an early age is a more promising approach to promoting good health than strategies that focus on treating pathologies after they have occurred. There is considerable support for such an approach in the behavioral science literature. Nutrition research (Note 2) indicates that nutrition habits are learned at an early age and that these habits tend to maintain through later life.

A second point concerns the success of health change programs aimed at subjects in their late teens or adult years. Generally, the literature indicates that those programs which work are expensive, labor intensive, and not generally available. Even these intensive programs have not shown good long-term outcomes.

The original aims stated for the Project were to:

- Develop a nutrition instruction program and empirically evaluate the impact of the program on children's nutrition and health-oriented behaviors.
- Develop and evaluate a technology of teaching self-management techniques to preschool and kindergarten age children.
- Develop and evaluate a parent training program to enhance family life

and support pro-health behaviors in themselves and their children.

The primary focus of this article is to describe the activities of the Pro-Health project that are relevant to the area of Direct Instruction, specifically the development of the Nutrition Education Instructional System (NEIS) and a removed-component toothbrushing program.

In the first two years of the project, the content of the NEIS program was finalized, the initial tracks of the program were written, a lesson production process was developed, and the first version of the nutrition program was completed and tested at the Child Development Center (C.D.C.), a private preschool in Kalamazoo, Michigan. The Pro-Health project also investigated various measurement methods and dependent variables that could be used to evaluate the effects of the NEIS program. A toothbrushing program, using a "removed-component" teaching strategy, (Engelmann and Carnine, 1982), was also designed and compared with a program using a "forward chaining" teaching strategy.

In the final year of the project, the NEIS was revised and implemented in a regular public school setting. In this setting, the program was taught by the regular classroom teacher as part of the kindergarten program. At the same time, another investigation conducted at the C.D.C. studied the effects of the NEIS when combined with various behavioral intervention strategies.

Over the three years that the project was funded, a number of research studies were conducted. The studies included investigations of: (1) behavioral procedures for increasing the amount of food consumed; (2) the relationship be-

tween verbal and non-verbal behavior with respect to foods; (3) the reliability and validity of an observational system designed to monitor food and nutrient consumption; (4) a comparison of alternative teaching strategies used in various tracks of the NEIS and in the teaching of toothbrushing; and (5) multiple evaluations of the NEIS. The remainder of this article provides a summary of only those research projects related to Direct Instruction.

## NEIS Description

The NEIS is a Direct Instruction program developed to teach young children a hierarchy of nutritional concepts and food selection strategies. The curriculum consists of instruction on three major groups of skills: language and vocabulary pre-skills, nutrition-related identification skills, and rules for selecting healthy foods.

Lessons are presented in a typical DISTAR fashion to small groups of students and require a high rate of unison and individual responses per instructional session. A lesson includes a script of the teacher-child interaction which includes teacher instructions, students responses, teacher feedback, and relevant visual stimuli.

The curriculum contains 15 tracks which cumulatively teach the content area specified in the program's educational objectives. Each track includes from 10 to 70 tasks, or exercises, which successively teach the content for that track. Within a daily lesson, 8 to 10 exercises from several tracks are presented (see Figure 1).

The language and vocabulary pre-skill instruction is designed to teach the children to follow instructions, to

engage in specific actions, to name body parts, to describe groups of objects with the words "all, some and none", and to identify objects as food or not food. The emphasis of this instruction is to teach the children to describe actions and objects with complete sentences. These sentence forms are then used to teach the nutrition-related skills.

The second group of skills is nutrition-related identification skills. Children are taught to identify: (1) food names and food groups; (2) various grain products; (3) "harmful parts of food" (sugar, salt, and fat) and foods which contain these elements; (4) types of cooking (steaming, broiling, baking, boiling, and frying); (5) types of packaging (fresh, frozen, boxed, and canned); and (6) typical snack foods.

The third and final group of skills taught are rules for selecting healthy foods. The rules taught in the NEIS allow the children to base food choices on food group membership, on the food's content of "harmful parts", and on the method used to prepare and package food. Children are first taught to state the rules and are then provided with extensive practice in applying the rules. Rule applications consist of making decisions about eating a specific food as follows: (1) is that food "good to eat?" (2) is that food or some other food "better to eat?", (3) if that food is not good to eat, what food is a "healthier alternative?", and (4) given a verbal description of that food with its nutritional features, is that food "good to eat?". On each of these applications, children are required to state "why?" they chose a particular food in terms of the rules taught in the NEIS.

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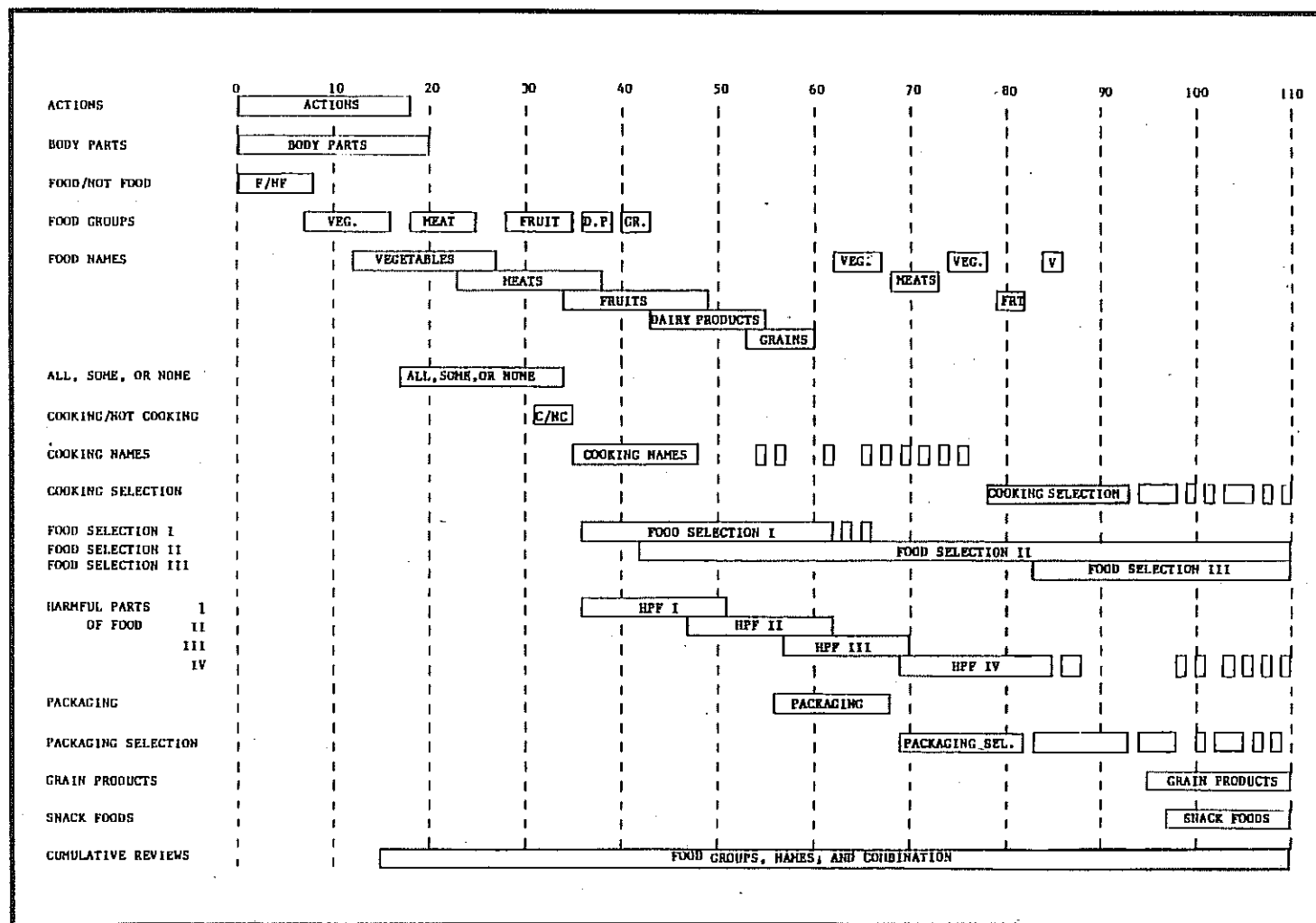


Figure 1. NEIS Scope and Sequence Chart showing content of all lessons. Activities for each lesson are presented by track.

Research Summaries

The Effect of NEIS on Nutrition Knowledge/Food Selection. Pilot Evaluation.

This study evaluated the effects of the first version of the NEIS program upon the acquisition of nutritional concepts and subsequent dietary choices in kindergarten-age children. Twenty-five children with a mean age of 5 years, 2 months participated in this study. The study was conducted over an eight month period at the C.D.C.

In order to evaluate the effect of NEIS instruction, tests were administered by project staff who had no prior contact with the children. Two aspects of the children's behavior were assessed: (1) nutrition knowledge and (2) food selection in a choice situation. The nutrition knowledge test consisted of items which sampled information, rules, and verbal rule applications taught in the NEIS. The items were presented to the children individually in a DISTAR format. An example of an easy test item would involve showing a child a page with pictures of fruit on it and, as the examiner points to each fruit, asking the child to name the fruit. An example of a more difficult item involved having the child select from pictures of food objects one which was (or was not) good to eat and explain why it was (or was not) good to eat. Food selection in a choice situation was assessed at lunch and/or snack. A choice between a nutritional and a relatively less nutritional example of a particular food was presented for each food served (e.g., hot dog vs. tuna and fruit drink vs. fruit juice).

A pre-posttest design was used. A total of 40 food choices were presented at lunch and snack over a five day period for each test. Nutrition knowledge tests were administered before and after the children completed the lessons in the NEIS.

The experimental subjects demonstrated significant improvements on the posttest evaluation for nutrition knowledge. Furthermore, the instructional program had a positive effect on the food choice responses of the experimental subjects in the second five-day evaluation period (although this difference was short of statistical significance). Figure 2 displays the mean proportion of correct responses on both measures.

Field Evaluation

An extensive investigation was conducted at a local kindergarten to determine the effect of a revised version of the NEIS on nutrition knowledge and food selection in a choice situation. Subjects were 40 boys and girls, approximately five years of age, assigned to one of four classrooms (Note 3). Two classrooms met in the morning and two in the afternoon. In this study, the afternoon classes (N=16) were taught with the NEIS, while those in the morning (N=24) were used as controls. Two teachers taught the four classes, one each in the morning and the afternoon. Before the study began, the teachers were given four hours of pre-service training on the use of the NEIS. Subsequently, the NEIS was taught to the afternoon classes during the last seven months of the school year under the supervision of the project staff to insure correct implementation. During the

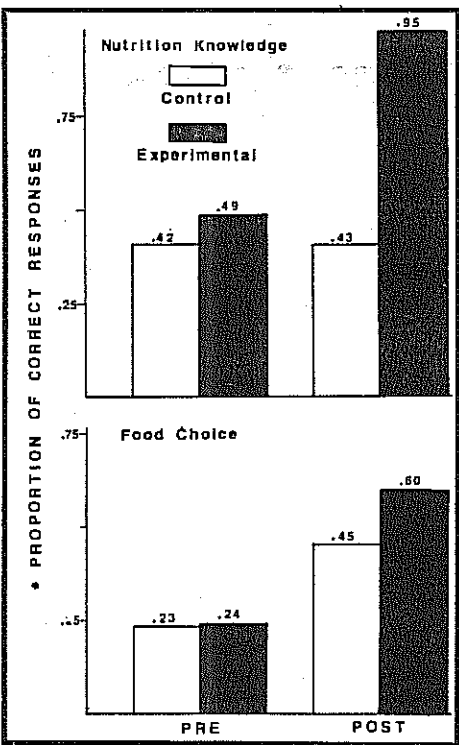


Figure 2. Mean proportion of correct responses on nutrition knowledge and food choice measures at pre- and post tests for control and experimental subjects.

school year, the children were taught 69-97 lessons.

A pre-posttest follow-up design was used in this study. Measures of nutrition knowledge and food choice behavior were the same as those used in the pilot evaluation. The knowledge test sampled all tracks in the revised curriculum, and the food choice test was administered at lunch over a two day span. A total of 14 choices (seven per day) were presented at each test administration.

The results showed a substantial effect of the NEIS on both response measures. Figure 3 displays the mean proportion of correct responses for both groups on the nutrition knowledge and food choice tests.

Statistical analyses were computed for all scores on the knowledge and food choice tests. Data were analyzed with a one-way analysis of variance, using the pretest as the covariate and the posttest and follow-up scores as dependent variables. On both the nutrition knowledge and food choice posttest and follow-up scores, the experimental group scored significantly higher than the control group.

When the knowledge and choice measures were examined in terms of the number of lessons taught, subjects who

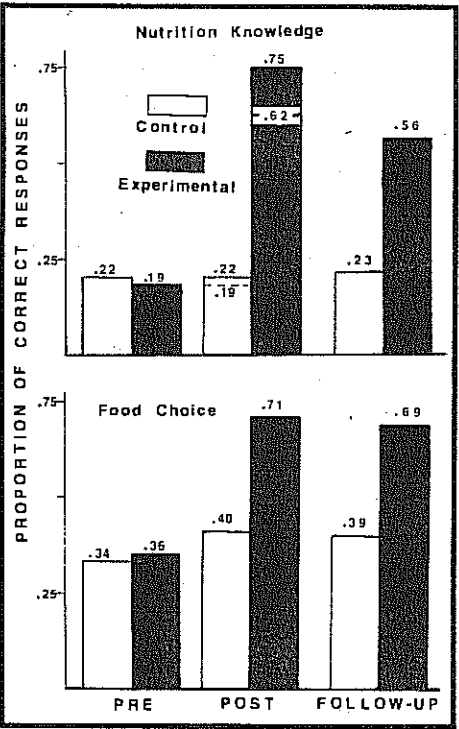


Figure 3. Mean proportion of correct responses on nutrition knowledge and food choice measures at pre-, post- and follow-up tests for control and experimental groups.

completed more lessons scored higher on the knowledge measure.

Correspondence Training and Food Choices

This study was conducted over a five-month period at the C.D.C. The subjects were ten preschool children whose ages varied from 3.7 to 5.5 years. All subjects were taught the first 35 lessons of the NEIS program before the experiment began. Instruction for four of the subjects was discontinued at that time, and they served as a control group. Instruction continued for the remaining six subjects. These six subjects were divided into two groups which differed in the sequence of manipulations they experienced. The phases which the subjects experienced are described below.

Subjects	Sequence
S2, S4, S7	A-B-C-B-C
S9, S10, S11	C-A-C-B-C
S12, S14, S16, S17	--- B-C

During Phase A (rule review baseline), subjects were asked to recite the food rules they had learned in the instructional groups before they were served lunch. No social or token reinforcement was given during this period. During Phase B, correspondence training with token and/or social reinforcement was used. The subjects were told what was to be served for lunch and asked which foods they were going to

choose (say-do) and they were asked which foods they had chosen (do-say). Saying and choosing nutritional food was reinforced with tokens or praise. Phase C was a baseline period during which NEIS training continued, but correspondence training and the reinforcement system was discontinued.

Each day at lunch four or five food choice opportunities were provided to the children and the proportion of "correct" choices (nutritious vs. less nutritious food) were recorded. Figure 4 shows these proportions for each subject for consecutive two-day periods.

We conclude from the data that children who had acquired basic nutrition knowledge by exposure to the NEIS are sufficiently responsive to correspondence training that they choose the most nutritious food available to them almost 100% of the time. Further, these children's good food choices maintain at this high level even when correspondence training is discontinued. Children who have not been exposed to the rule tracks of the program are responsive to correspondence training in this context, but not to the extent that children who had been exposed are. Correspondence training alone will induce children to choose nutritious foods, but they do not reach the same high level, or maintain that level, when they have not been taught the rule tracks of the NEIS program.

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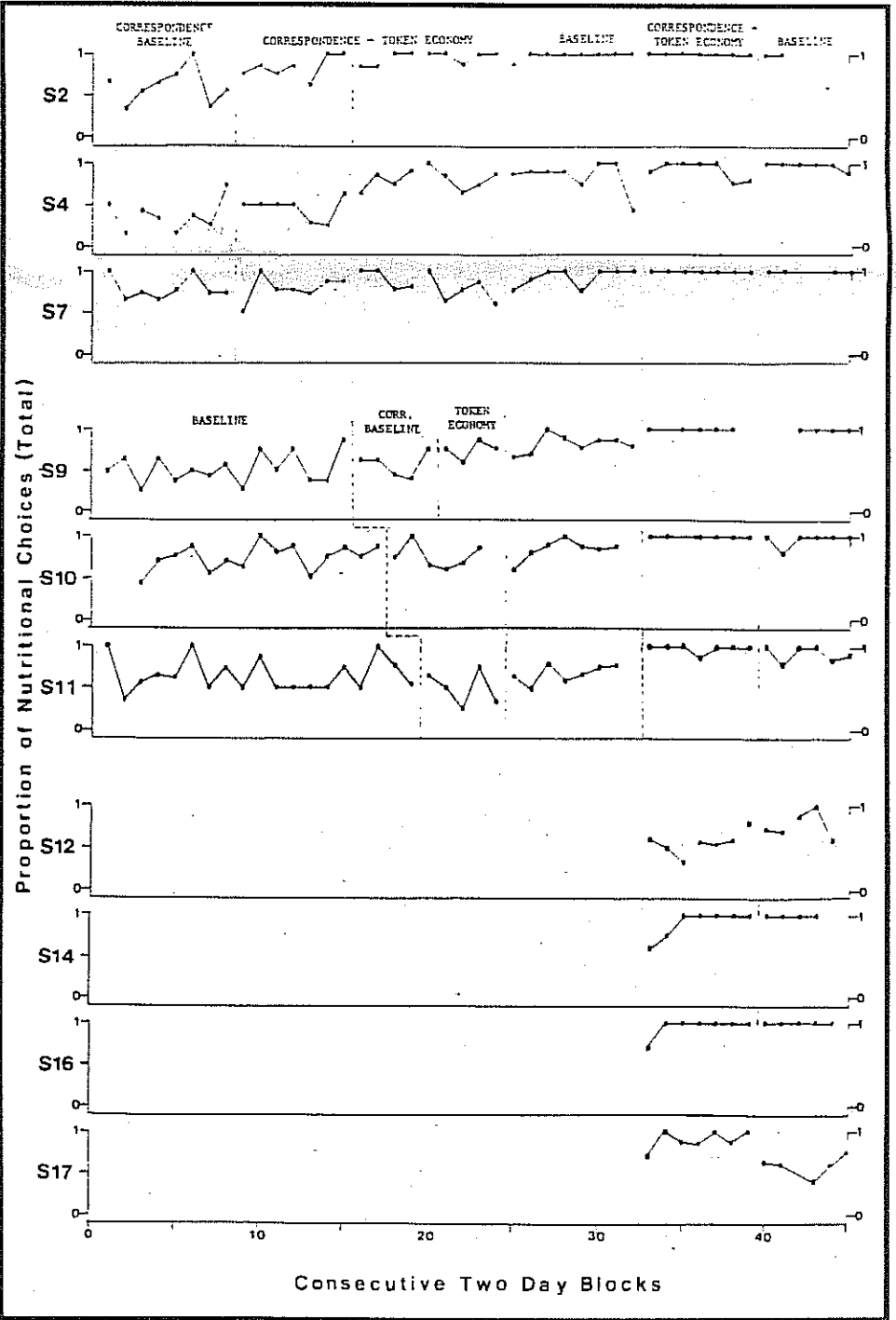


Figure 4. The proportion of nutritional food choices at lunch by two-day blocks for all subjects.



Three Procedures for Teaching Objects Concepts

This study compared three Direct Instruction procedures for teaching the labeling of foods in terms of the five basic food groups (fruits, vegetables, meats, grains, and dairy products). Twenty-one preschoolers served as subjects. They were randomly assigned to one of three experimental groups and a control group. A different procedure was employed with each of the experimental groups. The procedures were: (1) generative (after a limited number of members of a class are taught, the student generalizes to all members of the class), (2) linear-additive (each member of the class is taught), and (3) a combination of (1) and (2). Each procedure was used in designing a set of exercises to teach the labeling responses.

One of the three sets of exercises was taught to each experimental group. Each set of exercises was taught as one track in the NEIS. All other exercises in the program were identical for the three experimental groups. The results indicated that all three procedures taught the subjects to accurately label the food groups introduced. However, the generative procedure taught the labeling responses in less than half the time required by the other procedures. The control group was not taught and showed no gains. The results suggest that generative procedures may be useful in teaching large noun classes containing members sharing few common visual features.

Two Procedures for Teaching Toothbrushing Skills

In this study, a "removed-component" program was first used to teach four response components separately, "out of the mouth," before requiring in-the-mouth-training. A "forward chaining" program also trained these four responses, but employed a response-chaining procedure in the mouth only. The results were analyzed by a means of a multiple baseline design across subjects. This analysis indicated that the removed component program trained the skills more rapidly than the forward chaining program and that subjects in the removed-component program exhibited a higher percentage of correct responses.

Summary

Our experience in developing the NEIS and in conducting the related research has led to the following conclusions:

1. Although food choice behavior is subject to a wide range of influences, direct verbal instruction in the classroom can have a major impact on what foods children choose when given an opportunity to choose.
2. The failure of knowledge-oriented instructional programs to also change food choices may be explained by the instructional technology used to teach that knowledge.
3. Direct Instruction curriculum design and teaching strategies are applicable to the area of nutrition, and these procedures have been demonstrated to have greater generality than traditional approaches.

Learning Study Skills in Fifth Grade

Reported by Wes Becker

This report is a summary of a study by Abby Adams, Russell Gersten, and Doug Carnine of the University of Oregon. It was published in *Reading Research Quarterly*, 1982, 17, #27-55. Quotes are made with the permission of the authors.

This study examines the effectiveness of Direct Instruction in study skills on the learning of factual material from social studies. Fifth grade students from five schools in Eugene, Oregon, were first screened to insure adequate decoding skills and a reading comprehension score of at least 5.0 grade equivalents.

The screening, posttest, and training passages were taken from *Our Country* (Ginn, 1979). This text was not in use in the schools where the study was undertaken. Selections were chosen from the beginning of new topics (e.g., How the Civil War Started), which did not involve maps and graphs. Passages were approximately 600 to 800 words long.

The students were tested the day following the study skills training and two weeks later (to see if they continued to use the study method). Student recall was tested by a free retell of the passage content and a 10-item test at both testing times.

The study skills instruction was based on an analysis of research on studying. (The reader is referred to the journal article for research references.) The study procedures were:

1. Preview the passage by reading the headings and subheadings.
2. Read the passage aloud.
3. Read the passage silently.
4. Direct Instruction procedures may be useful tools in studying the relationship between verbal and non-verbal behavior, and more generally, the area of self-knowledge and self-management. We found in our work that children who acquired information about foods and how to choose nutritional foods, much more readily learned and maintained self-control strategies with respect to foods.
5. Direct Instruction procedures for teaching motor responses can speed up the teaching of health care skills (toothbrushing, washing, etc.).

Notes

- Note 1. This project was funded by the Public Health Service of the National Institute of Health, Grant #1-R01-HD13170-01. The authors would like to thank the Foundation for Behavioral Research, The Pro-Health Project, The Child Development Center, Kalamazoo Public Schools, and their respective staffs for their support and contributions to the activities reported herein.
- Note 2. See especially the *Journal of Nutrition Education*, also *Health Education* and the *Journal of American Dietetic Association*, for articles pertaining to early learning of food preferences.
- Note 3. The classrooms had 76 children assigned to them. The 40 children reported here are those who participated in the entire study (pre and posttest).

References

- Engelmann, S. & Carnine, D. *Theory of Instruction: Principles and Applications*. New York: Irvington Publications, Inc. 1982.

Table 1

Means (M) and standard deviations (SD) of number correct on short answer tests by training method

Training*	Immediate Test		Delayed Test	
	M	SD	M	SD
Systematic Instruction (SI)	4.73	1.92	4.73	2.01
Independent Study With Feedback (ISF)	3.43	1.90	3.33	1.55
No Instruction (NI)	2.77	1.29	3.20	1.25

\* 10 possible correct responses for each test

Table 2

Means (M) and standard deviations (SD) of number important information units recalled by training method

Training Method	Immediate Retell <sup>1</sup>		Delayed Retell <sup>2</sup>	
	M	SD	M	SD
Systematic Instruction	6.73	4.46	6.80	4.25
Independent Study with Feedback	5.67	3.04	4.87	2.47
No Intervention	5.33	3.20	4.07	2.46

<sup>1</sup> 27 important information units possible on retell 1.

<sup>2</sup> 28 important information units possible on retell 2.

2. Recite the subheadings. (Look up and try to say them to yourself.)
3. Ask yourself questions about what might be important to learn.
4. Read to find the important details. (To answer the questions asked.)
5. Reread the subheadings. Recite important details. Steps 2-5 are repeated for each subheading in the text.
6. Rehearse (read each subheading, recite important details).

Two experienced teachers carried out the screening, training, testing and post-testing over a 10-week period. A third teacher made observations during the training and testing phases.

Three conditions were compared with 15 subjects in each group. The *Systematic Instruction* group was given instruction 30 to 40 minutes a day for 4 days. At the start of each session practice was given on words that might be hard to pronounce in the passage. The students were instructed on how to apply the study method described above. The teacher would model each of the first 5 steps, the students would repeat the model, and then show independent use of the step. Oral use of the method was faded over days 3 and 4, so that by the 4th day the students studied silently, except that steps 5 and 6 were practiced aloud. The teacher followed a checklist of steps and gave the students feedback on their following them. At the end of each session a 10-question quiz was given.

A second group followed an *Independent Study with Feedback* condition. This condition was like more typical classroom procedures. The students met with the teacher for four days for similar amounts of time. They started with practice on new words that might be dif-

ficult and then the students were asked to study the passage. They could take notes if they wished. The quiz was given at the end. The students were challenged to try to improve their scores each day. The third group was a *No Instruction* group. They received no special training, but were tested after the training period was completed for groups 1 and 2.

Results

Tables 1 and 2 show the outcomes. The *Systematic Instruction* group was significantly higher than the other two groups on the short answer tests. While they also did better on the retell test, the difference was not statistically significant.

Observations indicated that the *Systematic Instruction* group spent more time studying than the other two. In the immediate test they studied 10 minutes, and the delayed test, 15 minutes. However, performance did decline over the two tests. It appeared that over the two weeks the students adapted and modified the strategies they had been taught in the 4 days of training.

Position Wanted

Amy Briggs, a former DI Fellow Through teacher from Dayton, Ohio seeking a position teaching Direct Instruction programs at the kindergarten or primary level. Write to Amy Briggs 1313 Old Darby Rd., Darby, Montana 59829.



# Report on the ADI Sponsored Preschool

From The Director  
by Gary Davis

*Ed. Note: The Early Education Preschool for mentally retarded and developmentally deviant children operates under the auspices of the Association for Direct Instruction. The preschool is housed in classrooms in the Springfield and Eugene School Districts. The preschool is a region-wide facility. Local school districts provide transportation to the preschool and some testing service.*

Mary A. walked around the room crying non-stop and not following any teacher instructions; John banged his head and bit his wrists so much that there were large scars on both wrists; Mary B. could label objects if they were one syllable, but could not put two words together. Bob was non-verbal and would throw huge tantrums if the teacher gave any directions that he did not want to comply with; Pam sat in the corner, did not understand any directions and could not imitate many actions; Ralph was extremely non-compliant; Sally had an IQ of 35.

The difference in these children after a year in the Early Education Preschool has been dramatic. Mary A. sits happily in a group and can follow one step commands; John's banging and biting has been stopped, his wrists have healed and he is following several one-step commands. Mary B. has become a bright social child and is preparing to enter a regular kindergarten program. Bob no longer throws tantrums and he can make statements of up to six words in length; Pam can follow one-task directions, can imitate actions and sounds and is beginning to stand on her feet. Ralph is on-task and socially involved with the other children and adults. Sally's IQ has jumped 30 points.

As the part-time preschool director for the past two years, I have helped and watched the progress in these and in the more than 40 other children who have been enrolled in the preschool. For some children, the progress comes at a surprisingly fast rate while for others the rate is painfully slow.

Children enrolled in the preschool are either mentally retarded or developmen-



tally disabled. Developmentally disabled children are children with epilepsy, cerebral palsy, or another severe disability which requires training similar to that required by mentally retarded persons.

There is one teacher and two assistants for each class of 12 children. A physical therapist, funded with the assistance of the March of Dimes, provides individual treatment and sets up group programs for children as needed. Children range in age from three to six. The school is funded by the Oregon State Division of Mental Health.

The preschool has been in existence since September of 1981. In October of 1981 we were reviewed by the State. Verbally, the State review team reported that we were the best preschool that they had ever observed in the State. Their written report noted the following program strengths:

1. Parents expressed a high level of confidence in the Director and staff's ability to provide effective, high quality educational services to their children. They were extremely pleased with the program staff's willingness to communicate with them and include them in the development and implementation of educational programs.

2. The program's design and emphasis on functional skill development has resulted in one of the highest levels of classroom instructional activity ever observed by the members of this team in a preschool for the severely handicapped.

3. The classroom staff exhibited highly developed teaching skills. It was our opinion that this high level of proficiency could, in part, be attributed to the intensive supervision of classroom programs that was provided by the program Director.

4. Records documenting student eligibility, IEPs, and documentation of program effectiveness were complete and comprehensive.

5. Cooperation between the preschool programs and a number of Lane County school districts continues to show solid improvement.

That was after less than two months in the business! Since then, teaching skills have improved, we have become smarter about what skills to teach and more efficient in everything that we do (except for the paperwork).

Understanding language and communicating is the base upon which all instruction is built; therefore, the preschool's instructional emphasis is language. Some children start the preschool with no idea that the noise around them can be translated into actions. Asking them to take an object or stand up means nothing. Others have a good receptive language, but are unable to produce words or phrases. Some can label objects but are unable to say four-word phrases.

Teaching children with language and other disabilities presents different problems than teaching children without them. Chief among these is the number of repetitions that it may take for a child to master a skill. The more severe the disability, the greater the number of repetitions that are needed. Often, more than a thousand repetitions are needed to teach a skill like "take it" or "give it to me." A second problem is that often, when learning new concepts, children in the preschool will confuse many of the concepts they have previously mastered. Dealing with these problems requires a different program and teaching schedule. Language skill practice is massed in short group sessions, about 15 minutes, and then repeated during the day. These high intensity language sessions are normally followed by fine or gross motor sessions that require less intensity.

By coming back and doing a second and sometimes a third language session, children not only get additional practice, but are forced to extend their skills over time. The rule for mastered skills is that they are never dropped from the child's program. Often mastered skills become part of a routine to teach new skills.

We try to squeeze every instructional minute possible out of our short day. Teaching starts as soon as the children step inside the door. The first activity is what we call language chains. If the child is verbal, we work on information tasks like, "What is your last name?" or "How old are you?" If the child is nonverbal, we work on tasks like, "Touch your head" or "stand up." The chains allow the teacher to deliver a high number of tasks at a rapid pace. By performing the task and being reinforced appropriately, the child is "set up" in a work mode. Naturally, not all the three hours are spent in small group instruc-

tional activities. After an hour, the children break for a snack and recess. This is time for everyone to rest a little and recharge the "batteries." After 45 minutes, we go back to the small group instruction and repeat the first hour's schedule. The last 10 to 15 minutes is spent in a social activity like singing or playing games.

Since 1970, I have been working in the Follow Through Project with a wide range of different schools and staffs. Never have I been so completely satisfied as I have been with the preschool. I have seen every child progress. I have worked with a staff that has provided the instruction to make this progress happen. My only regret is that I am only involved quarter time.

From the Staff

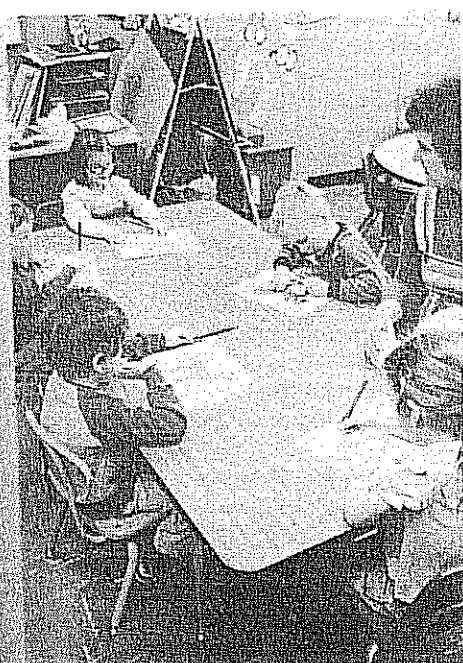
I never thought myself capable of teaching handicapped children, but when I became the parent of one, my attitude changed and my desire to help those children grew. I have been involved in several special education preschool programs. This one ranks the highest. Even my lowest functional student is progressing and learning. Structured teaching, in 15 minute sessions that are repeated again during school hours, is paying off. The Early Education Preschool is basically service oriented. The staff works as a unit. If a child becomes stuck on a skill or concept, then consultants are called in to work with us in dealing with the problem.

H. Krusejerena  
Teacher Assistant

Preschool—play, nap, stories, songs, incidental learning through experience. This was my idea of preschool; therefore, I didn't think I would ever end up teaching in a preschool. But Early Education Preschool is different. The emphasis is on learning, using the techniques of Direct Instruction—task analysis, individualized goals, teacher feedback, high criterion student performance. Yes, in other words, we have high expectations for our students and they learn to expect more from themselves.

L. Eng Hyett  
Teacher

Continued on Page 10



Physical therapy treatment is done directly in the classroom. This is fairly unique. Classroom treatment allows for a totally coordinated program for each child. The therapist is afforded the opportunity to observe the children as they function in their daily activities, and any deficient areas can be responded to immediately. The teaching staff is also more aware of the students' level of physical ability and can incorporate some of the treatment techniques into the teaching program. This proximity and cooperation enhances treatment and assists each child to achieve their optimum level of performance.

H. Kramer  
Physical Therapist

I came to work as a teaching assistant at the Early Education Preschool after five years of experience in two other preschools for developmentally disabled children. One big difference here is that I get help whenever any questions or problems come up with my work. I find that all I have to do is ask and someone with the knowledge and experience is called in to analyze the problem and then help plan a program to suit the needs of the child. It is great to have such good communication between the teaching staff and the Director of the program.

L. Mooney  
Teacher Assistant

If any program can satisfy an individual's desire to teach, it is this one. Teaching—both the amount (continuous) and the type (direct)—is the major reason that I am enjoying my work at the preschool so much. The incredibly skilled staff, children that work so hard, and supportive parents create an environment that facilitates dedicated teaching on our part, and continuous progress on the part of the children that we are serving.

K. Weiherman  
Teacher

As a parent to a handicapped child, as well as being a teaching assistant in preschool special education classrooms for three years, I feel everyone should know how good the Early Education Preschool is. Early Education combines learning instruction with fun activities to make the environment exciting for children! I've never seen children advance at such a rapid rate in the years I've been involved with special education. The program is adaptable to the individual needs of each child. Specialists are brought in to deal with any problems to help the child. Open communication between parents and staff creates a relaxed atmosphere for all those involved and insures that all needs will be dealt with. For those very important first years, there is no better educational boost for that "special child."

M. Kubli  
Teacher Assistant

## From the Parents

Note. Names have been deleted by the Editor.

Dear Gary:

As a parent, I have been very pleased with the cooperation and commitment

of the educators of the Early Education Preschool. The school has demonstrated concern, creativity, and dedication in meeting the educational needs of its developmentally delayed students. I appreciate the level of consistency, the independence, and the varied learning skills that my daughter has achieved through her involvement with this program.

Dear Gary:

I am writing this letter so that you can tell others what the early Education Preschool has done for my child. At just 4 years of age, my child had totally learned to control her environment and anyone around her. If she were left alone, she would continually do a little dance and twist her hands and head—self-stimulating. Along with this she would yell very loudly. She had no purposeful vocalization. When anyone interfered with this action, she would bite herself or bang her head with her hands. She would occasionally bite someone else if they were in her way; but she usually was abusive to herself. She had been in a handicapped preschool situation since she was 18 months old, during which time she had learned exactly what to do to get out of any type of commands put on her.

In the Spring of 1981 when you (Gary Davis) assumed directorship of the school she was in and it was moved to a new location, you brought in Geoff Colvin to work with her. In Geoff, she encountered for the first time someone who was looking forward to the "challenge" this little 28 pound wildcat offered. Geoff Colvin began by purposefully putting her into situations that would predictably cause her to become self abusive and to tantrum. Instead of avoiding the problem, he willingly met it head on. As expected, her behavior problems escalated. Geoff's goal was to reach a peak in her bad behavior and then hopefully see a rapid decline after that. It didn't take this child long to figure out that if she acted very tired; he would give up on her for the evening. Then, when he left she would begin her self-stimulating and yelling and carry on into the early hours of the morning. Geoff became aware of her tricks and was able to get through the first phase of having her follow the simple commands of "stand up" and "sit down" previously unknown to her. Once she learned this, it was used as a "punishment device" when she bit or hit herself. Gradually, her biting and self-abuse began to diminish. She can even sit still without rocking or fidgeting for a few minutes at a time now. The home program that Geoff initiated was followed up in her school program.

Before Geoff began working with this child she had very little, if any, eye contact and would not respond to any communication—almost appearing deaf. Now she is more alert and will respond to some spoken commands. She would only eat eggs, macaroni, and cheerios; everything else she would spit out and tantrum over. She is now beginning to expand her diet. She still has a long way to go to catch up with children her age, but we feel confident now in the direction we are going with her.

We feel eternally grateful to the people from the Early Education Preschool

# Dissent

## Matching Program Strengths to Student Needs in Language Interaction: A Case for More Careful Program Selection

Francine Holland  
University of Alabama at Birmingham

(Editor's Note: We welcome Dr. Holland's article, which she has agreed to let us publish as a Dissent. We also request dissenting views on various aspects of Direct Instruction from other readers.)

For years, educators have been searching for effective intervention strategies for teaching language. Of all curriculum areas, language has continued to be the one area about which we seem to know the least. Packaged, sequenced programs have continued to flood the market, promising to meet the language needs of all children needing remediation. As a result, teachers have elected to use one or more of these programs, often without regard to the appropriateness of their programming levels. In these efforts, the DISTAR Language Program has often been selected as the program of choice. All too often, this program has been chosen in error.

### Good Program, Good Intentions, Poor Match: Poor Results

As a whole, the Direct Instruction Model has been demonstrated to be an effective teaching model. The Model cannot be faulted for using proven techniques of scripted presentations, small-group instruction, signals, positive reinforcement, precise teacher training and supervision, and criterion-referenced testing. The real problem has not been with the DISTAR Language Program but with the match between the Program and those with whom it is sometimes used. The original intent of

for the guidance, time, and support they gave us. Within this team of experts, we found people who were willing to tackle our child's problems head on; where as before, we had only met professionals who shared our frustrations over this child. We would highly recommend this educational program to anyone with a child like ours who needs special help from competent, caring people.

Dear Gary:

Our son will have attended the Early Education Preschool for two years when school is out in June. He is 5 years old now, so this is his last year before entering kindergarten in the Fall.

When he entered the preschool, he had good language comprehension, but had extreme trouble expressing himself. He has learned so much from the preschool that, at times, it is hard to remember when he was having such difficulty in language. He is learning reading and math, which I sure didn't learn until first grade! We're amazed at how far this preschool has helped him to progress so rapidly. We are thankful for the opportunity for him to be able to attend such a school and receive the help he has needed.

DISTAR was to provide educational programs for disadvantaged children in the first three grades. "...bear in mind that we are talking about teaching elementary school children with a high proportion of low-income parents" (Becker, 1977, p. 529). However, educators—and special educators in particular—often have attempted to apply the DISTAR Language Programs with other populations, such as those at the levels of trainable and severe/profound mental retardation, as well as with those who demonstrate preverbal skills (no referential words in place) and/or low-verbal abilities (one to two-word utterances on the average).

In dealing with such children who may demonstrate poor communicative motivation, limited use of purposive signals, and restricted referential abilities (association of labels with objects/events), a number of factors are essential in planning for intervention. In considering these, it can be demonstrated that the DISTAR Language Programs begin at levels which exceed the prerequisites for emerging or basic language needs.

As children's language emerges, they begin to talk because they have information to share and because they have a reason for doing so (Miller and Yoder, 1972). In the early 1970's, there was a shift of emphasis from grammatical components to semantic or meaningful categories (Bloom, 1970). Later, the emphasis shifted again to that of pragmatic or functional ways in which language is used (Halliday, 1975; Dore, 1974). Emerging language skills now appear to be guided first by children's realization of the purposes language can serve in different situations (e.g., "Mommy" can be used to tell Mom to get my bottle, to pick me up, to move out of my way, etc.) (Bates, 1976). In addition, children realize that, within a given context, words can be used to mean differing bits of information when paired with other behaviors (Bloom, 1972, 1974). For example, "Mommy" can mean "This is my Mommy" if accompanied by patting Mom's knee or it can mean "No, Mommy, don't want to eat that" if accompanied by head turning when the spoon approaches. It is not until children are well on the way to putting two and three word combinations together that evidence of grammatical morphemes, clauses, phrases and functor words begin to seep into productive use (e.g., "I goed with Mommy" or "See the mans" (Palermo and Molfese, 1972; Prutting, 1979).

These components of language are the most appropriate targets in intervention for emerging language. Following developmental patterns, focus is placed initially on pragmatic and semantic relations rather than on the structural side of the language system. Only when children have built a strong foundation for expressing meaning and affecting the environment do they turn attention to structural detail in their verbal output. The basic semantic structure (e.g., agent-action-object) children use solely to express a perceived event closely ap-

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# Distar Language Dissent

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proximates the eventual formalized structure known as grammar (e.g., subject-verb-object). Once the shift is made to structure, the child can readily put functor words into the existing patterns to make the language more structurally appropriate (i.e., "say the whole thing").

DISTAR is a very positive program, both in its Direct Instruction approach and in its systematic sequencing of higher level concepts of language. It is a most appropriate program for children who have basic structural foundations of language in place, but who misuse or fail to use concepts appropriate to the kindergarten and early elementary age levels. For these children, DISTAR should be the language program of choice. But for children whose language is still in the formative stages, it cannot be recommended.

## Acquisition Principles Applied to Intervention

We have learned a number of principles from the normal acquisition process, and have applied them to language intervention. Specifically, the following components necessary for the formulation of early language focus on cognitive and social aspects of the communication process. These areas provide us both with necessary precursors to language as well as with implications for language training (McLean and Snyder-McLean, 1978).

*Children learn about objects/concepts through experience with the "real thing."* Children learn language concepts through the exploration and manipulation of objects/events in the environment (Piaget, 1971; Macnamara, 1972). As a result, they discover and store away both perceptual and functional features of those objects as part of an identifying "reference bank" (Nelson, 1974; Clark, 1973). For example, a child's first notion of "dogginess" comes as a result of pulling the tail, being licked in the face, pulling to standing by holding handfuls of hair, and being surprised by the bark or growl elicited from climbing on top of the dog. Through discovery, they affirm that this "thing" has a tail, a wet tongue, a hairy body, and a loud noisemaking potential.

In intervention, the child needs exposure to concrete objects for exploration and discovery of the features that make that object unique from all others (McLean and Snyder-McLean, 1978; Bloom and Lahey, 1978). In contrast, the DISTAR Language Program uses abstract materials, or flat-planed pictures. Opportunity for object study is not provided unless specifically planned by the teacher as an adjunct to the DISTAR lessons.

*Children learn that words represent objects/events once a firm reference bank is in place.* It is only as a word or "referent" is perceived as another feature of an object that a child begins to form representation abilities (Cromer, 1974; Schlesinger, 1974). That is, only after the reference bank is established do children develop the understanding that abstract words represent or "stand for" all those features of concepts they have stored in the reference bank. For programming, then, continual, simplistic labels need to be used as descriptive features of ongoing events, objects, and

activities. DISTAR, however, assumes or requires that the child have this symbolic function (or representation ability) as a prerequisite for entry into the program. There is no component of the lessons that specifically teaches this skill.

*Children learn how one thing relates to another through direct experience.* Subsequent to learning that labels represent objects, events, or people, children develop an understanding of the relationships that may exist between and among these concepts. These include such relationships as actions of agents upon objects (e.g., me roll ball, boy push car), locations in which those objects may be placed (e.g., car floor, baby crib), expressed properties or characteristics of those objects ("big ball," "fast car"), and so forth (Prutting, 1979; Miller and Yoder, 1974). Specific training situations need to be offered which provide demonstration of the relationships between objects/events, with specific descriptive labels being trained. For example, once a child has learned through manipulation that the features of "ballness" (round thing, rubbery, rolls, bounces) equals the label ball, then how other environmental constructs impact upon the ball should be demonstrated as well. For example, specific training would be directed toward such semantic constructs as roll ball (action-object), more ball (recurrence), my ball (possession), big ball (attribute), ball floor (location), and so on, to establish additional meaningful ways in which relationships can be described (MacDonald, 1976). The DISTAR program assumes at least some notion of these semantic classes and requires responses which incorporate new ones. It does not allow, however, for training of the semantic relationships *per se* in a concrete context.

*Children learn about reciprocal roles of communication from early turn-taking requirements.* Children develop skills at an early level through social exchanges and rituals developed with the caretaker (e.g., mutual smiling, vocalization, eye contact). Eventually, these routines lead to the child's desiring to initiate the communication exchanges. Reciprocal roles that characterize communication between individuals have their beginnings here, with interactions between the child and others being continued only as long as the child contributes to the exchange. Intervention, then, should focus on the role of exchanges, and specific requirements for verbal turn-taking should be at a maximum (Mahoney and Seely, 1976). In the DISTAR Program, however, allowance for social exchange is at a minimum. That is, the lessons are teacher-directed and children are expected to give only the direct responses which are the target of the particular lessons. Continued exchange is not typically encouraged during the lessons.

*Children learn to use words as a result of discovering their power in affecting change in the environment.* Initially, children develop gestural systems as their communicative tool until they realize the power of language or word use (Bates, 1976). As words are seen to be more effective in establishing needs and desires, children attempt to build a repertoire that functions to influence the behavior or thinking of others (Rees, 1978). For these skills to develop,

children should be given routines which allow for interactions with others, establish situations for turn-taking and sharing, and provide activities which require that the child ask questions, give responses, direct the behavior of others, and perform other pragmatic functions that language serves. In the DISTAR Program, little attention is given to the pragmatic functions that language serves. Rather, the functions used in DISTAR are primarily limited to labeling or answering functions (Dore, 1974).

*Children learn language more readily when the language input from others is one level greater than the child's own output.* Structurally, mature speakers of the language modify language input to the child by keeping directives and comments simple and to the point. In this way, the appropriate structure of the language is preserved, while the level of difficulty is appropriate to the child's comprehension level. In intervention programs, labels are kept short, with the most success being established by keeping the verbal input to the child one stage beyond the child's own productive level, i.e., if the child is using single words, the trainer should use two words per example utterance to describe relationships (Huttenlocher, 1974). DISTAR uses a consistent language structure in its directives, but this is typically well beyond the level of a child with emerging language.

*Children learn to apply the rules of grammar as they hear formal language structure preserved in the shortened utterances of mature speakers of the language.* Grammatically correct models are heard consistently by children as they observe how their primitive utterances are expressed in formal, adult language (Morehead and Ingram, 1973). During training, feedback to the emerging language child should be given by repeating and expanding these primitive utterances into the formal structure that closely approximates the child's own language level. Verbal output requirements should not exceed that level. By using the DISTAR Program, verbal output requirements may far exceed verbal capabilities of low-verbal children with emerging patterns of language. These programs require grammatically appropriate responses from the children (i.e., "Say the whole thing") at pre-specified levels of complexity.

It should be emphasized again that the criticism of the DISTAR Language Program is not based on its use with the population for which it was designed. Rather, it exceeds the level of emerging language in children such as those functioning at lower cognitive and language levels. It includes program content for children who have well-established language foundations in the semantic and pragmatic functions of early language behavior. Once the focus shifts to more grammatically-based language enrichment, then DISTAR becomes an appropriate program of choice.

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Francine Holland is now Coordinator of the Deaf-Blind/Severely Handicapped Project, Callier Center for Communication Disorders, University of Texas at Austin.

## DI Conference in Kalamazoo

The Sixth Annual Direct Instruction Conference at Kalamazoo will be held August 15-19, 1983, at Western Michigan University, Kalamazoo, MI. The conference is co-sponsored by the Department of Psychology and the Division of Continuing Education. Graduate credit in Psychology or Education available.

Write for more details:  
Division of Continuing Education  
Direct Instruction Conference  
Western Michigan University  
Kalamazoo, MI 49008



# Testing Basic Language Concepts<sup>1</sup>

Virginia Bingham<sup>2</sup>  
Dorothy Ross

Teachers of DISTAR Language have often expressed the need for a test that is useful when placing children in the program. If you are one of these teachers, you might be interested in the recent publication of the *Basic Language Concepts Test*. This test is a shortened and standardized version (with added features) of the original *Basic Concept Inventory*.

## The Test

The *Basic Language Concepts Test* (BLCT) is recommended as an efficient language screening test for young children entering kindergarten or first grade, and as a measure of language readiness for 4-5 year olds entering preschool. It can also be used to evaluate older children being considered for special placement in remedial programs.

The test has normative data on a sample of 2500 children. These norms can be used to evaluate a child's performance relative to other children of the same age. The test also has a strong criterion referenced component to aid in selecting specific remedial goals for individual children.

Teachers of DISTAR Language can use the BLCT score to place children in Language I. Specific instructions for doing so (which are not included in the manual) are presented below.

The BLCT can be administered by professional teaching personnel, special educators, or para-professionals who have been trained in testing. The BLCT is administered individually, usually in about 15 minutes. The test has four sections, each one concentrated on a particular aspect of language proficiency. Part I tests for *receptive deficiencies* and requires the child to listen to instructions, point to pictures, and carry out simple actions. Part II-a tests for *expressive deficiencies* with eight sentence repetition tasks. Part II-b and c require the child to answer questions about the sentences just repeated, in order to test the child's grasp of the *representational* character of language. Part III tests for recognition of *sequences* and *patterns* in language.

## The Manual

The manual that accompanies the test contains eleven sections. They are: Overview, Introduction, Preparing to Give the Test, Administering the Test, Scoring the Test, Interpreting Test Performance, Instructional Remedies, Large-Scale Screening, Test Content, Research and Development of the BLCT, and the Test Script (including the picture plates used with Part I).

The Test Script is intended as a guide to facilitate standardized presentations for people unfamiliar with the test. Those administering the test are urged to learn the order and wording of the presentation tasks so that they can maintain eye contact with the child while presenting the tasks.

The section on Research and Development reviews the ten years of testing and data analysis which went into development of the instrument. It also describes the test population. White, Black, Native American and Hispanic children of both advantaged and disadvantaged

economic populations from Oregon and six other geographical locations in the United States were included.

The section on Interpretation of Test Results contains information on the use of the diagnostic and criterion-referenced information the test produces. This includes: (1) how to compare the child's score to the standard for children of the same age; (2) how to identify children with special expressive problems; (3) how to distinguish between "disordered" and delayed problems; (4) how to chart errors to reveal ineffective language strategies and/or their specific language deficiencies; and (5) how to analyze individual errors for further identification of specific language-concept deficiencies.

## DISTAR Language Placement Using the BLCT

The BLCT score can also be used to place children in DISTAR Language I. The score on the BLCT represents the total number of errors on all parts. A score of 30 or more errors indicates a possible language problem. Scores of 23-29 may indicate a need for additional testing or observation to determine appropriate placement. (See the manual for additional information on interpreting scores.)

The DISTAR Language I program is designed to allow entry at different points, depending on students' skill levels. Possible entry points are lessons 1, 11, 21, 31, and 41. Although a placement test accompanies the program, the BLCT score alone may also be used as a placement instrument.

If the child makes 30-60 errors on the BLCT, do not administer the Language I Placement Test. Place the child at lesson 1 in the program and present at least one complete lesson a day, reviewing those parts of each lesson that present problems.

If the child makes more than 60 errors on the BLCT, do not place the child in DISTAR Language I, unless the placement is accompanied by other language activities. The non-DISTAR activities that should be presented include: (1) activities that teach demanding ("I want..."); (2) activities that teach yes-no more precisely than those provided by DISTAR Language I; (3) object identification tasks that involve real objects; and (4) phrase and single-word repetition (within meaningful context). For students who score in this range, do not present all the activities specified for the DISTAR Language I lessons initially. The recommended DISTAR activities for this child should initially be limited to the action track for the daily lessons. (Action track activities occur on every lesson.) The activities related to pictures are probably not appropriate in early instruction with this child.

After the child has successfully performed on the action-track activities from the first 20 lessons of DISTAR Language I and has worked on the additional skills specified above, the child may be placed on lesson 1 of DISTAR Language I and receive entire lessons (including the action-track activities) at the rate of one lesson a day. Note that time constraints may make it impossible to teach a complete lesson each day; however, the rate of presentation should

# Engelmann

instruction on the teacher. He states that teachers should stress concept variables instead of developmental ones, and adds that concepts are controllable and can be taught in conjunction with specific rules of behavior. Engelmann, Granzin, & Severson (1979) point out that:

Not all problem children are abnormal. Not all the procedures teachers use to correct these children are well conceived. And certainly not all the instructional sequences they use are flawless or even adequate. This being so, the remedial focus must move to the teachers. (p. 363)

In his classic book, *Preventing failure in the primary grades*, Engelmann (1969) identifies numerous errors teachers typically make during their instruction:

- Frequently teachers shift the focus of student learning from problem solving to acquiring a repertoire of "pseudo-academic" behaviors. These behaviors often result in the student employing an "experimental approach" with new material. The child learns to look busy, and when called upon, guesses as to the correct response.
- The skills taught by teachers are not carefully ordered to insure student success. Task-analytic sequences with absolute criteria for acceptable performance are frequently lacking in commercial materials.
- Teachers do not teach rule applications or basic principles to facilitate learning. The student often is not shown how to apply what s/he has just been taught. Engelmann (1969) states that "the payoff in education is always in terms of what you can do with your learning."

Given these novel explanations as to why students fail, Engelmann and his cohorts developed a new teaching ap-

proach based on the principles of behavior analysis and cognitive psychology. This teaching approach is referred to as Direct instruction. The Direct Instruction philosophy is succinct (1981): (1) there is a viable technology of teaching that is not being fully used; (2) teachers are responsible for children's learning; (3) every child can be taught.

## Direct Instruction Programs

Many of the commercially available Direct Instruction programs have the following attributes in common:

- Teacher presentations are scripted.
- Presentations are fast-paced.
- Small groups are utilized to maximize student response opportunities and teacher monitoring.
- Tasks are taught to criterion with *all* students participating.
- Individual student tests are given to determine mastery.
- Correction procedures are built into the instructional programs.
- Teachers use verbal reinforcers and response contingencies to maintain student motivation.

All Direct Instruction materials have carefully controlled teacher wording. Scripted lessons help insure that teachers present material in a way which will help students understand, not confuse them. Similar instructional formats and teacher directions are used throughout a particular program, although the amount of teacher-imposed structure is faded as students begin learning the tasks. Engelmann (1969) maintains that many mildly handicapped children fail to understand task demands because they lack basic language skills. Direction words like *below*, *circle*, *underline*, and *cross-out* may be unfamiliar to the naive learner. By programming the basic vocabulary of instruction, the teacher can help avoid student failure.

Rapid pacing of instruction enhances student attention and performance (Carnine, 1976). Engelmann (1969) suggests that teachers should present about ten times as many examples of a concept as they would usually present in the given period of time. Small groups permit the teacher to arrange students according to their skill levels. According to Direct Instruction research, lower-performing children should be in a group of 4 to 7 children to insure maximum teacher feedback (Carnine, 1976). The use of hand signals enables several students to respond at once without listening to each other for correct answers. Thus, signals provide students with more opportunities to respond and acquire feedback. A Direct Instruction teacher will use "individual check-outs" to be sure that students are not merely imitating peer responses, but have mastered the material. Correction procedures are also built into the program, under the assumption that learning is not errorless and that students frequently make mistakes (even in response to the best designed presentations) (Engelmann, 1980a). The teacher can easily focus on the exact sub-skill missed, correct it efficiently, then proceed with the lesson.

Continued on Page 13

not be less than three lessons every five days.

If the child scores fewer than 30 errors on the BLCT, the child should enter DISTAR Language I according to the following guide:

Scores	Place on Lesson
24-29	11
17-23	21
11-16*	31
6-10*	41
0-6*	—

\*Note: Children making 16 or fewer errors probably do not have a serious language problem. Placement in DISTAR Language I is optional. Children making six or fewer errors may be able to meet the entry criterion for DISTAR Language II. Teachers should administer the placement test in the Language II Teacher's Guide.

<sup>1</sup>The *Basic Language Concepts Test* and manual are published by C.C. Publications, Inc., P.O. Box 23699, Tigard, Oregon, 97223.

<sup>2</sup>The co-authors of the *Basic Language Concepts Test* and *Manual* are Siegfried Engelmann of the University of Oregon, and Dorothy Ross and Virginia Bingham of the Eugene Hearing and Speech Center, Eugene, Oregon. If you have questions about the test or about workshops related to training testers for large-scale screening with the BLCT, contact the authors directly.



Immediate teacher feedback within every correction procedure reduces the chance of students learning misrules. Finally, Engelmann (1969) views the use of verbal reinforcement as pivotal to the success of his programs. He believes that "the teacher must react to the child. S/he must exaggerate, showing excitement when the child succeeds, disapproval when he behaves in a way that will not lead to success, and patience when the student is trying to learn."

## Instructional Design

"Teachers must avoid doing what comes naturally" (Engelmann, 1980a). Frequently, teachers are unaware that they may be presenting the learner with misrules, extensively wordy presentations, or inaccurate information. The way around these possible flaws in teaching techniques is to present information in a carefully sequenced, dynamic manner which is only open to one interpretation. Engelmann (1980a) states that for the teacher, the goal of being an impeccable instructional presenter is analogous to becoming a proficient dancer, gymnast, or pianist. Great amounts of practice and work are needed. Engelmann views the teacher as both an instructional designer and a conveyor of information. If the teacher is using a commercially available Direct Instruction program, much of the instructional design has already been integrated into the lesson. But even if the teacher is not using a pre-packaged Direct Instruction program s/he may still employ many of the same principles of Direct Instruction with the curriculum materials on hand.

Regardless of the program selected by the teacher, the learner's behavior is predicted by stimuli and not solely by responses and reinforcers (Engelmann, 1980a). Learning occurs when a series of examples are presented and "labeled." This process requires the learner to progress through "inductive internal operations." This cognitive process is facilitated by the teacher who can simplify the learning process through the use of concepts, discriminations, and rule applications. Engelmann (1980a) deftly summarizes the potential impact of these teaching techniques on the learner:

The analysis of examples and their juxtapositions is not the end of this analysis but the beginning; the axiomatic building blocks then can be parlayed into incredible structures and can simplify the task of viewing, digesting, and reconstructing knowledge in the learner.

## Engelmann's Philosophy Reconsidered

Few persons in education have generated more controversy—and consensus—than Siegfried Engelmann. The fruits of Engelmann's labors are extensive. His ten page curriculum vita exemplifies the scope and proficiency of his work. During the last decade, over sixty authors have cited him or his work in many of the leading journals. Not all these citations were delivered as accolades. Some critics seem to object to the man, others to his work, and some to both. He has been called "abrasive,"

and "pushy." A few pedagogues contend that his limited academic credentials and "checkered background" do not qualify him to work as a professor of education (Boyd, 1977).

Within the arena of education, his instructional programs have been assailed as "too highly structured" and "mechanical" (Vanetten & Vanetten, 1976). Several researchers have claimed that the DISTAR reading method is "less effective than the indirect and combined [teaching] methods, both of which devoted time to perceptual motor and motor deficit training" (Serwer, Shapiro, & Shapiro, 1973).

The multi-million dollar Engelmann-Becker Follow Through Project has probably received the most attention and criticism. House, Glass, McLean & Walker (1978) reported that they found "no evidence that the various Follow Through models differed in effectiveness from one another..." House (1981) noted that the results presented in the Abt Associates data were spurious at best. He pointed out that the Direct Instruction materials used in the Follow Through sites matched the "unusual response format" of the Language B subtest of the Metropolitan Achievement Test (MAT). House (1981) also implied that the high MAT scores reported by the Direct Instruction cohorts were not due to scholastic achievement but an artifact of teachers who taught to the test. The control groups in the study were also "mismatched" according to House. He stated that "there is no way of telling whether Follow Through models are more beneficial than traditional programs\*." Perhaps the most scathing criticism levied against Engelmann's curriculum materials and his association with the Follow Through (F-T) Project comes from Camilli. In his unpublished dissertation (1980) he claimed that "given the weakness of the F-T data base, relatively small gains, and the inability to match consistently gains and losses with the objectives of the F-T models, there is no sound basis for packaging them as products and distributing them in the educational marketplace."

Despite the preceding barrage of criticism, Engelmann's philosophy and instructional materials have gained substantial support from many educators and researchers. Ryckman, McCartin & Sebesta (1976) surveyed several reading programs used in the elementary school. Their findings indicated that "a highly structured, teacher-controlled program does not negatively affect such abilities as divergent production of thought units. Such programs are frequently criticized for alleged negative effects on creativity; our findings...do not support that criticism." Bernice Wong (1979), considered by many to be one of the leaders in the field of learning disabilities, proclaimed that "the success of the Direct Instruction System in the Teaching of Arithmetic and Reading (DISTAR) is largely due to Engelmann's ingenious ap-

plication of discrimination learning, operant principles, and programming skills. Recently, Stevens & Rosenshine (1981), surveyed the research on teaching techniques. They isolated four general characteristics of effective instruction: (a) it takes place in groups; (b) it is teacher directed; (c) it is academically focused; and (d) it is individualized within the teacher-led group. Engelmann's Direct Instruction approach stresses all four of these elements.

Numerous other articles by Lloyd et al. (1977, 1980, 1981), Carnine (1976, 1978, 1980), and Becker (1977, 1978) further substantiate Engelmann's philosophy. Lloyd, Cullinan, Heins, & Epstein (1980) summarize the perspectives of the Direct Instruction encampment: "The findings are in harmony with a growing body of research indicating that the Direct Instruction methodology is a particularly promising means of providing academic skill instruction to the educationally handicapped or disadvantaged and, as evidenced by this study, children with learning disabilities." Additional research supporting Engelmann's philosophy towards instruction is accumulating every month. Some of the latest research is now focusing on methods for reversing the "failure-cycle" that frequently is associated with mildly handicapped learners. Dudley-Marling, Snider & Tarver (1982) report that failure in school may be one of the primary considerations facing educators today. "The success of some academic programs may be due to the fact that they foster an internal locus of control and, in turn, enhance self-esteem." Engelmann has been concerned with this issue for over decade. In 1969, he noted that children should be continually reminded that if they keep working and trying, they will succeed.

## Conclusion

Maggs and White (1982) note that few professions are more steeped in mythology and less open to empirical findings than is education. However, if schools are going to continue to evolve and prosper, educators must learn to blend the meritorious research of the past with present technology. Many of Engelmann's earlier contributions to education have already withstood the test of time. Unfortunately, educators have been slow to apply his expertise in their classrooms. The challenge of this decade will be to bridge the gap between the researcher and the classroom teacher. While a Siegfried Engelmann can show us the way, it will be for naught unless teachers and administrators in the field carry the new technology to the classroom.

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## Direct Instruction in Special Education

A revised version of *The Application of Direct Instruction in Special Education: An Annotated Bibliography* has been completed. Topics include: the conceptual interface between Direct Instruction and Special Education; research using Direct Instruction programs with Special Education populations; and, investigation of Direct Instruction procedures and processes with Special Education students. The annotated bibliography is available for \$4.44 plus \$1.55 for shipping from:

Ted Fabre  
Follow Through/Education  
University of Oregon  
Eugene, Oregon 97403

By Gersten & Keating

in teaching all "basic skills", such as arithmetic computation, and more complex cognitive processes, such as reading comprehension and math problem solving. The low-income students in the Direct Instruction Model were performing at or near middle class "norm" levels at the end of the third grade. To many, the most unexpected finding was that students taught by Direct Instruction (or the equally structured Behavior Analysis model) also scored the highest on the affective measures. Approaches like Bank Street's that tried to create a world to improve the child's self-concept did not succeed—even on that measure. Their students reported less self-confidence and less sense of responsibility than their peers in more structured programs.

There were several intricate, technical problems with the national evaluation, which have been debated endlessly in the academic literature. Yet, despite these problems, it has been consistently documented that the Direct Instruction program *does* teach low income kids to read at grade level. In November, 1981, Joan Gutkin, the coordinator of New York City's Direct Instruction program (located in Brownsville, the second poorest neighborhood in New York) told Newsweek: "I can guarantee that every child will learn to read." In fact, the scores on the New York test showed every second grader in the program, but one, reading *above* grade level. At a comparable school several blocks away, only one child out of thirty was reading at grade level. A recent essay in the New York Times concluded with a quote from Doug Carnine, the current director of the national Direct Instruction program: "It's very important to realize the significance of the demonstration that these kids can do well in school. If... the public doesn't believe it is possible, they will never make the efforts necessary for success."

Critics of the model assert that the effects of structured programs dissipated when students were left on their own. (In fact, Piagetian educators such as Constance Kamii assert that these programs will actually harm students in the future.) Thus, followup research is essential. In 1982, Wesley Becker and I published a study in *The American Educational Research Journal* looking at the later effects of the model on students in one urban and six rural communities. (Most of the urban communities did not agree to participate.) There were several basic findings to the study. The first was that, 2 or 3 years after they had left the program, the Direct Instruction students were consistently performing at a higher level in all areas of achievement. The magnitude of the difference, though, was much smaller than when the children were in Follow Through. It appeared that students did not forget what they had learned well in the first three or four years; their oral reading accuracy and math problem solving skills were still at a high level. But, in traditional fourth through sixth grade programs, they were not progressing at the same rate as they had in Follow Through.

The High School Study

In June of 1981 and 1982, the first two groups of Follow Through students (those who began kindergarten in 1968 and 1969) were due to graduate from high school. We\* decided, with a bit of trepidation, to design a study to see whether the Direct Instruction program did have an impact on the high school careers of those who participated. Only a few key questions were examined—whether the dropout rate of Follow Through (FT) students was lower than that of comparable students in the neighborhood or district, whether the percentage of students who completed high school was higher, whether there were differences in the percent of students who go to college, and whether the program had any impact on junior high and high school achievement.

As can be imagined, the potential problems were numerous. It was unclear whether districts would release sensitive information on dropout rate and family income. Also, mobility was a huge problem. In the four years of Follow Through, the average attrition rate was 50 percent. If this kept up for the next nine years, it was unclear whether enough children would be left to conduct the study.

The chief technical problem that has plagued almost all large-scale field research studies, including the multi-million dollar Follow Through evaluation, is how to find a group of students in each neighborhood who are comparable to those who went through Follow Through. Family income information for parents, often gathered from free lunch forms and the like, tends to be unreliable; furthermore, some refuse to divulge information. Little is available in the way of achievement pretest data in most districts.

After numerous discussions with the school districts, we decided the only reliable criteria we could use were the percent of families on welfare (AFDC) and ethnicity, since the information from the welfare agencies was judged to be more accurate than anything the schools had. We were able to find comparison schools in four of the eight communities agreeing to work with us—New York, Flint, East St. Louis, and Williamsburg County, S. Carolina. In the other four sites, it was impossible to find a comparison group. For example, in Uvalde, Texas, a small town next to the Mexican border, all the Chicano children in the county are in Follow Through, and the Anglo children are in the regular program. Besides the obvious language and cultural differences, the medial family income of the Anglo students is almost triple that of the Follow Through students. One school in the study reported 100% of its students were receiving welfare payments; it was simply impossible to find a school at a familiar poverty level. In these cases, alternative strategies, such as time series designs, were used. (See related article on Uvalde.)

\* The we refers to Doug Carnine, Follow Through Director, research associates Linda Meyer, Bill White, Tom Keating, Robert Taylor, Scott Martinson, and Gary Davis. Over 50 other people have been involved in some phase of this project.

Computerized student files were virtually unknown in most school districts in 1968. All data were retrieved by manually going through manilla folders in the principal's office. Student mobility was a huge problem, though surmountable with perseverance. The most extreme case of this was New York City—from the two Brooklyn elementary schools involved in the study, students had dispersed to 67 different high schools in four boroughs (each of which had to be visited to retrieve the files).

What kinds of long-term expectations are reasonable, if, in fact, we presented a better than average program to young children?

The following were ours:

1. The longer children stayed in the program, the better the performance measured at a later time.
2. The better the program is implemented, the greater the residual difference we would expect to see later.
3. The poorer the traditional program that follows the intervention, the lower the overall performance of the students at a later time.
4. The more positive the initial learning experiences, the stronger the expected tendency for children to stay in school (rather than drop out).
5. Although the program would interact with the instruction received by the students following the program, there should be some lasting positive effect that is reflected in improved performance. However, such lasting effects could well be masked by lower retention and dropout rates in the "better" program.

Results

Preliminary results for several of the sites have recently been completed. (Those for New York were reported in the fall, 1982 *DI News*.) In East St. Louis, the largest site, there are consistent positive effects in academic achievement (see Table 1). The most dramatic effects are found for the 1970-K starting group, the first to experience four full years of the Direct Instruction program. In Math, they are at the 29th percentile, while the other students from the district are at the 18th. In 9th grade Reading, they are the 40th percentile (almost grade level), while the comparison students are at the 26th percentile. In Language, they are actually above grade level (58th percentile vs. 35th for the comparison group). The three previous graduating classes also show significant effects in Reading, but not consistently in Math or Language. The data also show that there were significantly fewer high school dropouts for the first group of Follow Through students (1968-1). The dropout rate is 19 percent for the Follow Through students and 28 percent for the comparison group. Graduation/dropout results are still coming in for later groups.

Table 2 shows some results from Cherokee, North Carolina. The DI Follow Through program was initiated in a BIA school in this Indian community in 1970, simultaneously for grades K, 1, and 2. The children who started kindergarten in 1969 were also studied for comparison. The results for Reading show a progressive improvement as the students received more years of Follow Through. In 9th grade, the Non-FT group was at the 7.9 grade equivalent, while the four-year FT group was at the

Table 1						
E. St. Louis 9th Gr. California Achievement Test, Reading						
	FT			Comparison		
Starting Year	N	% ile	G.E.	N	% ile	G.E.
1968-1*	118	22	7.3	161	17	6.7
1969-1*	65	20	7.0	173	15	6.4
1970-1*	60	23	7.4	141	18	6.8
1970-K*	54	40	8.8	121	26	7.6
E. St. Louis 9th Gr. CAT Language						
	FT			Comparison		
Starting Year	N	% ile	G.E.	N	% ile	G.E.
1968-1	114	25	7.3	158	23	7.1
1969-1	63	24	7.2	166	19	6.7
1970-1*	56	41	8.9	137	33	8.1
1970-K*	51	58	10.2	111	35	8.3
E. St. Louis 9th Gr. CAT Math						
	FT			Comparison		
Starting Year	N	% ile	G.E.	N	% ile	G.E.
1968-1*	114	18	7.2	156	14	6.8
1969-1	59	15	6.9	161	13	6.7
1970-1	59	19	7.4	141	18	7.3
1970-K*	53	29	8.2	117	18	7.3

\* p = .05 (Significant effect)

# Students Follow-up in H.S.

## The Uvalde Study

By W.A.T. White and Russell Gersten

Table 2

Cherokee 9th Gr. California Achievement Test, Reading

Starting Year-Grade	Trend Analysis		
	N	% ile	Mean G.E.
1969-K (No FT)	45	29	7.9
1970-2 (2 yrs. FT)	67	31	8.1
1970-1 (3 yrs. FT)	60	40	8.8
1970-K (4 yrs. FT)	57	45	9.3

Cherokee 9th Gr. CAT Language

Starting Year-Grade	N	% ile	Mean G.E.
1969-K (No FT)	44	46	9.3
1970-2 (2 yrs. FT)	67	43	9.0
1970-1 (3 yrs. FT)	60	38	8.5
1970-K (4 yrs. FT)	57	47	9.4

9.3 grade equivalent. The Language test (grammatical usage) fails to show a consistent trend, but all groups perform well on this test.

Final graduation data for the Cherokee four-year FT groups will not be available until spring 1983, but the trend is toward a decreased dropout rate and increased graduation. Non-FT students (1969-K) had a dropout rate of 38 percent, the group with one year of DI was 37 percent, the two-year group 25 percent, and the three-year group 22 percent. These findings parallel their achievement scores at the end of third grade.

Williamsburg County, South Carolina is a rural, agricultural community. When Follow Through began, it had one of the highest illiteracy rates in the country. For those beginning first grade in 1969, the Follow Through group shows a significantly higher percentage of high school graduates, lower percentage of dropouts, and higher rate of acceptance to college (see Table 3). (Note the percent graduates and percent dropouts do not add to one because of retentions. Some retentions are yet to graduate.) Results are not significant for achievement differences. Again, these may be hidden by dropout and retention differences.

### Summary

These results are preliminary. Additional data are still coming in for students retained at some point in their careers, and further analyses and verifications of the data are now being conducted. This Spring, the Follow Through students in New York (results reported in the Fall issue of *DI News*) will be interviewed to get their side of the story.

There is more to the study than the numbers. The senior author spent much of the first six months of 1982 at the sites, working out the details of the study. It was impossible not to notice, with some marked exceptions, how low teacher expectations were for these low-income adolescents. This was reflected sometimes by apathy and sometimes with sarcasm and hostility.

On the one hand, it is gratifying to see the impact Follow Through has had for

the students in New York, to see adolescents from one of the poorest sections in New York City (long known for its poor achievement) perform at grade level in reading in junior high, and to see significantly fewer former Follow Through students dropping out of school than is typical for the district. Likewise, in what is one of the poorest counties in the country, with one of the highest illiteracy rates, it is gratifying to see that Follow Through has improved the graduation rate. On the other hand, even with Follow Through and the high reading scores, the dropout rate is still 40 percent for the New York students. In South Carolina, almost all the students who took the College Board Exams (usually the upper ten percent) received scores between 200 (no items correct) and 280 (2nd percentile and below).

Although the results are not final, the studies show that the three or four years of an effective, academically-oriented program in the primary grades generally had a permanent and positive impact on the students' lives...or at least on the academic aspects of their lives. But, as much as anything else, the study alerts us to the seriousness of the problems that exist in high schools and the need finally to begin doing something about them.

Uvalde, Texas, students who were in the Direct Instruction Follow Through project in their first three grades of school were compared in high school with similar students who completed high school in Uvalde during the prior two years. Uvalde (45 miles from the Mexican border) is one of the largest Follow Through Programs in the Direct Instruction Model. Over 99 percent of the Follow Through students are Chicano. Many enter first grade with little or no knowledge of the English language.

A preliminary analysis of the high school data shows that the Direct Instruction students:

- Are more likely to receive a high school diploma.
- Are less likely to be retained in any grade.
- Show better attendance in 9th grade.

The results do not show appreciable differences between ninth grade Follow Through and Non-Follow Through students in achievement scores or high school grade averages, but such differences are likely concealed by the differences in retention and dropout rates. If lower performing students are given an extra year to learn, they can make gains that would help to mask a Follow Through advantage. Similarly, most dropouts are from those failing in school. This selective factor could also mask true Follow Through Non-Follow Through differences.

### The Sample

The DI Model was implemented in the first grades in Uvalde in the Fall of 1968. This report covers a follow-up on the Chicano students who entered first grades in the Fall of 1966, 1967, 1968, and 1969. The students from the two years prior to Follow Through are compared with those from the first two years of Follow Through. A large number of students in all four of the annual classes failed to remain in the community. The percentages remaining in the community for the years 1966 to 1969 respectively, were 43.1%, 41.6%, 60.7%, and 44.1%. The figures given in the results reflect data only the students who did reach high school for some period of time.

### Results

Table 1 shows that a higher percentage of Follow Through students graduated than for the two preceding classes of students. It also shows that there were fewer retentions among Follow Through students, and especially after the first year.

High School attendance was also examined (Table 2). DI students showed better attendance during 9th, but not 10th, 11th, and 12th grades. The dropout rate differences could be affecting the attendance differences. A student was considered to have good attendance if the student was absent for 10 or less days during the year.

Table 1				
Starting Year	N*	Percent Graduating from High School	N	Percent Retained
1966 — Non-FT	103	37.9	110	43.6
1967 — Non-FT	97	42.3	111	46.8
1968 — FT	87	59.8	94	42.5
1969 — FT	47	53.2	62	23.0

\* These N's exclude students who moved away during high school.

Table 3  
Williamsburg County, SC

Classes Starting in 1969	Follow Through		Comparison Group	
	School 1	School 2	School A	School B
No. of Students	35	53	15	39
Percent Graduates*	76%	87%	59%	76%
Percent Dropouts*	8%	3%	27%	8%
Accepted in College*	19%	34%	32%	4%
Classes Starting in 1970				
No. of Students	22	76	33	37
Percent Graduates*	83%	74%	61%	59%
Percent Dropouts	5%	8%	9%	5%
Accepted in College	28%	30%	36%	27%

\* Significant effect ( $p = .05$ )

Table 2

Percent Good Attendance in 9th Grade

	N	Percent
1966 Non-FT	97	55.7
1967 Non-FT	101	59.4
1968 FT	90	68.9
1969 FT	54	83.3

These findings show that in spite of many years of a return to a more traditional educational setting, effects of the Follow Through instruction in the DI Model during grades 1 to 3 are still detectable on variables obviously relatable to life success.

By Mary Gleason

Ed. Note: See related article on page 23.

The Ph.D. program in Special Education at the University of Oregon offers a variety of emphasis-area choices. One option includes field-oriented supervisory training. Students who choose this option are also trained in school supervision and consultation, college teaching, grant writing, research, and University participation. The program is directed by Siegfried Engelmann and staffed by a group of experienced trainers, called senior supervisors. This article describes the doctoral level supervisory training program at the University of Oregon and outlines the role that graduates of the program learn to implement in school districts upon completing their training (see Figure 1).

### Preservice

#### Teaching Formats

Usually, the teachers which the supervisors and supervisor-trainees work with have not previously taught DI programs. These teachers attend preservice sessions to receive initial training from the senior supervisors (trainers). The trainers present the rationale for Direct Instruction and for specific techniques such as unison responses, signaling, pacing, etc. Before showing naive teachers how to present formats, the trainers teach the preskills required by the formats, such as stop sounds and continuous sounds, or various signals used in DISTAR Reading I. At the same time, the new supervisor-trainees observe and take notes, preparing to become trainers.

After the teachers demonstrate adequate mastery of preskills, the trainers model key formats from the programs that the teachers will be teaching. They show the teachers how to present formats by using the same steps that they use to teach children: model and test. The trainers model a format while the teachers play the role of children, then the teachers present the format while the trainers play the student role.

In teaching teachers, the trainers use the same principles that they use in teaching children. They talk rapidly and with enthusiasm, keeping the group moving through the tasks so that the teachers will learn much content in one session. The trainers give reinforcement for effort and good work, provide corrections when teachers make errors, and require that teachers meet a high criterion. The goal from Day 1 is that the teachers will know how to present formats. The teachers must know their formats well so that, when they begin teaching children, they can concentrate on monitoring the children's performance.

When teachers can present formats reasonably well, the trainers begin teaching them how to provide simple corrections. The trainers model how to provide a specified correction for a preplanned error, then observe while the teachers try using the same specified correction for the preplanned error. Now, the trainers must begin teaching teachers to transfer skills from one situation to another. The trainers make unplanned errors so that teachers learn to apply their newly-learned correction pro-

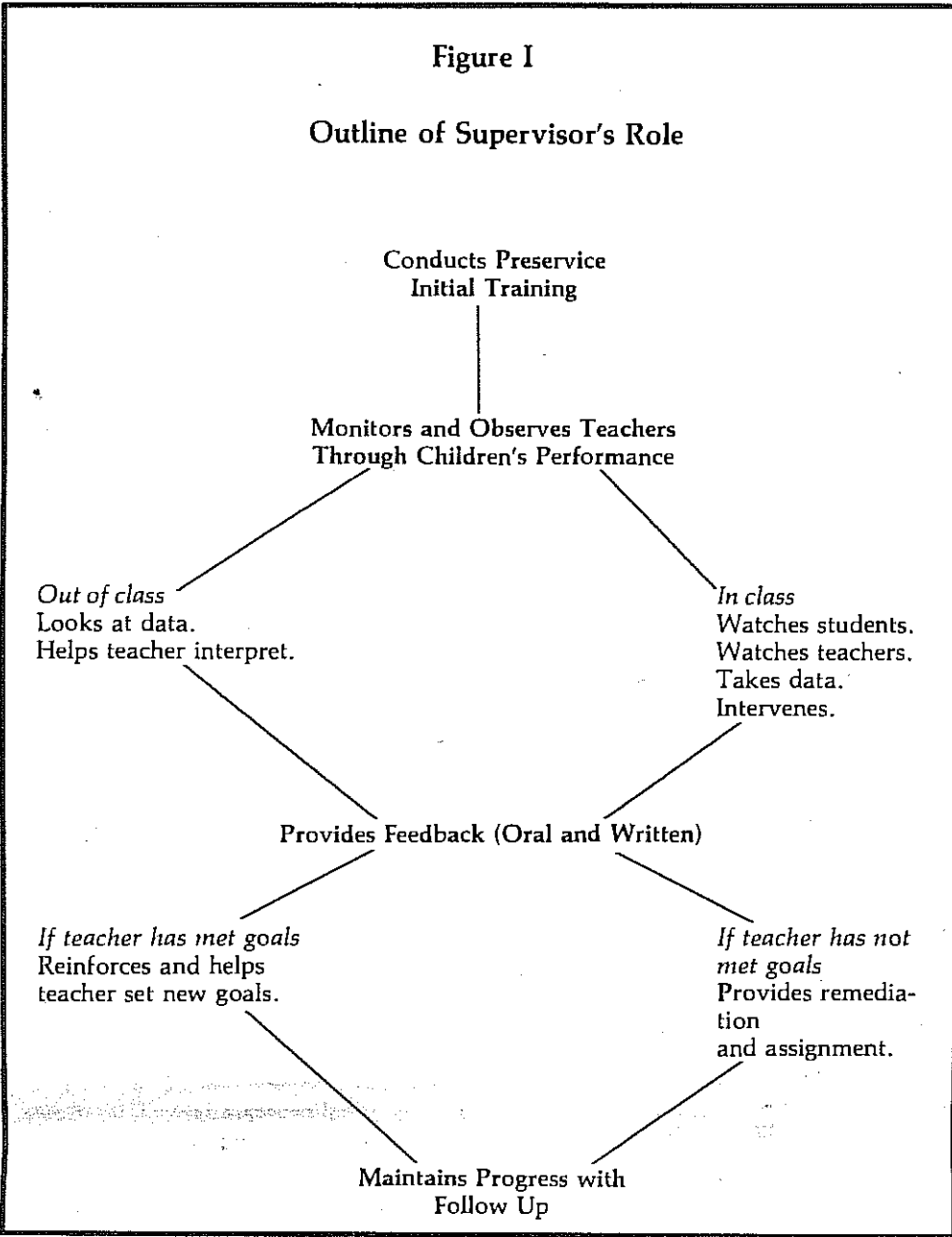


Figure 2: Direct Instruction Practicum Checkout Sheet

Trainee: \_\_\_\_\_

	Supervisor's Initials	Date	Comments
1. Sounds	_____	_____	_____
2. Format checkout (one-on-one)			
Following the format	_____	_____	_____
Using clear signals	_____	_____	_____
Maintaining a quick pace	_____	_____	_____
Correcting errors (simple corrections)	_____	_____	_____
Monitoring student performance	_____	_____	_____
3. Format checkout (Group)			
Stating expectations (rules)	_____	_____	_____
Following the format	_____	_____	_____
Using clear signals	_____	_____	_____
Obtaining 100% group response	_____	_____	_____
Maintaining a quick pace	_____	_____	_____
Correcting errors	_____	_____	_____
Monitoring student performance	_____	_____	_____
Providing Positive Feedback	_____	_____	_____

cedure - spontaneously; model, test, retest. In small groups, the teachers practice presenting formats and providing corrections for errors while the trainers and supervisor-trainees provide feedback and model appropriate correction procedures.

#### Classroom Management

Following formats, good pacing, enthusiasm, and asking for frequent responses all help keep students attentive; however, teachers will frequently still find themselves dealing with inappropriate behaviors and lack of student motivation. During the preservice, the trainers prepare teachers for these problems by talking about behavior management skills and modeling the skills while teachers play the role of children. Then, teachers practice the skills in small groups, with some adults playing the role of children and with trainers and supervisor-trainees giving feedback. When video tapes are available, trainers use them to illustrate examples and nonexamples of effective behavior management skills. The nonexamples show how teachers may actually teach children to misbehave rather than to behave.

Following adequate small-group practice, the trainers and supervisor-trainees conduct individual checkouts with each teacher. The adults who are playing the role of children look at "behavior cards" which tell them to talk out, not respond, etc. The supervisors check whether the teachers state expectations, praise appropriate behaviors, ignore inappropriate behaviors, and provide consequences for those whose inappropriate behaviors persist.

#### Getting Ready for the Classroom

Once teachers have been taught to follow formats and use effective behavior management skills, the training becomes more individualized. The teachers' assigned supervisors work with them until they are firm on the first lesson they will be teaching in the classroom. When ready, each teacher "checks out", first in a one-to-one situation with a supervisor, then in a group situation with other adults playing children (see Figure 2).

The trainers also assist the teachers in writing a management plan, which consists of small group rules, possible reinforcers, and possible negative consequences. The trainers and supervisors check each person's teaching schedule for adequate teaching time. They also talk with the teachers about the role the supervisors will play in the classrooms.

#### Monitoring Teachers through Children's Performance

##### In Class

The core of the new supervisors' training program begins when the trainees begin going into classrooms to observe. During the first term, the senior supervisors and supervisor-trainees work in teams. The senior supervisors demonstrate how to identify specific problems in the classroom and how to provide effective solutions to problems that the teachers do not yet know how to solve. Specific problems include poor teacher presentation skills (such as inappropriate pacing), not providing enough voice emphasis for critical format word-



# Training Program

ing, not correcting errors, or rushing students into errors. In addition, problems may be related to poor management skills or to structural problems, such as not scheduling enough teaching time. The senior supervisor will provide the new supervisor with many demonstrations of how a change in the teacher's performance will cause a change in the children's performance.

To identify specific problems, the senior supervisor looks at the children's behavior. S/he asks, "Are the children attending? That is, are they either watching the teacher or looking at the book? Is the group responding together without one child leading the other children? Are the children answering with few errors?" If the answer to any of these questions is "No", the senior supervisor must look at the teacher's behavior to complete the diagnosis.

Suppose that the children are not responding together. The senior supervisor will look at the teacher to see if the teacher is using clear signals and if the teacher is requiring the students to answer together. Now the description of the problem is complete: the group is not answering together; the teacher appears to be using good signals, but the teacher is not correcting the children and requiring them to answer together.

An accurate and specific description of the problem is critical to the supervision process, because the precise description always implies the solution. In this case, the supervisor must use a technique that will teach the teacher to correct the children and require them to answer together. The supervisor chooses from several remediation techniques: *demonstration*, *intervention*, and *inservice*. When using *demonstration*, the supervisor takes over the group and shows the teacher how to use a particular procedure, such as fast pacing or positive reinforcement. When doing an *intervention*, the supervisor does not do the teaching, but gives suggestions or prompts to the teacher, such as a prompt to praise hard workers. When providing *inservice*, the supervisor uses activities similar to those used in preservice.

Without the children, the supervisor and teacher practice such things as signals or following formats. For the problem above with group members who do not answer together, the senior supervisor provides a demonstration for the teacher so that the teacher can see how the children look and sound when they are answering as a group.

For the first several weeks, the senior supervisor provides all remediation. When the supervisor-trainee demonstrates reliability in identifying specific problems and suggesting appropriate solutions, increasing responsibility for supervision is given. The new supervisor will eventually be an expert at diagnosing and remediating instructional problems in the classroom. Diagnosis is not easy, nor do all remediation techniques work in the same way with all teachers. Regardless of the technique chosen, the supervisor's goal is to help the teacher experience success as soon as possible. Teachers are no different from children. They need to experience a high rate of success to prevent frustration.

## Out of Class

In addition to information gained from direct observation in the classroom, other data sources can provide information about the children's and the teacher's performances. The supervisor looks at Continuous Progress Test scores, Lesson-Day-in-Program gains, and error data from worksheets to diagnose possible problems. The supervisor then uses classroom observation to verify the problems and to suggest solutions. The supervisor also teaches the teachers to use data to pinpoint problem areas. When teachers can interpret the data, they can use the information to make changes in their own teaching behaviors.

## Providing Feedback

Following classroom observation, the senior supervisor communicates with the teacher about the observations made. The supervisor conveys his/her support while providing feedback to the

teacher. With sincerity, the supervisor tells the teacher what was implemented well during the observed lesson. The supervisor then talks about problem areas, always describing them in terms of the children's performance. The supervisor suggests a remediation and gives the teacher an "assignment", which is recorded on the "Technical Assistance Form" (see Figure 3). An assignment is a change that the teacher must make during the next day's lesson. New supervisors are allowed to conduct feedback sessions and give assignments when they can accurately state the assignment and the plan for remediation to the senior supervisor.

## Maintaining Progress with Follow Up

Supervisors follow up all assignments by observing whether teachers have made the assigned changes. The supervisor's follow-up is designed to make sure the teacher implements the desired changes. Even after assignments are met, the supervisor must continue to reinforce the teacher's effective behaviors so that the teacher's progress and the children's success are maintained.

## Summary

After a year of working with senior supervisors, the new supervisors become increasingly independent. Those who receive supervisory training as part of their doctoral program are well prepared to assume instructional leadership roles in school districts upon completing their training. They are able to train other supervisors and to demonstrate to teachers the keys to effective teaching.

Many beginning university faculty positions involve practicum supervision. Doctoral students who have completed the Direct Instruction supervisory practica will not only be able to provide direct supervision, but will also be able to train new groups of supervisors, contributing to an important aspect of teacher training.

## Research Institute Using DI to Study Generalization Processes at the U of Oregon

In October of 1982, the U.S. Department of Education initiated four research institutes across the country to pursue topics of importance for the education of students with severe handicaps. One of these institutes was established at the University of Oregon with a mandate to conduct applied research and build instructional packages that improve the generalization and maintenance of behaviors acquired by severely handicapped students. Under the direction of Tom Bellamy at the University of Oregon, the Extending Competent Performance Research Institute has begun a five-year plan of research and intervention. As part of this plan, the University of Oregon staff will work closely with Drs. Robert Koegel and Glen Dunlap at the University of California at Santa Barbara.

The educational problem faced by Institute staff is much the same as that encountered by direct instruction programmers several years ago: How to design programs that not only teach specific instructional examples, but also teach the "general case." The content area, however, is substantially different. Severely handicapped students need instruction on skills that are immediately functional. The trend at this time is away from an emphasis on academics, and more toward adaptive skills such as shopping, street crossing, vocational assembly or tool use, dressing, etc.

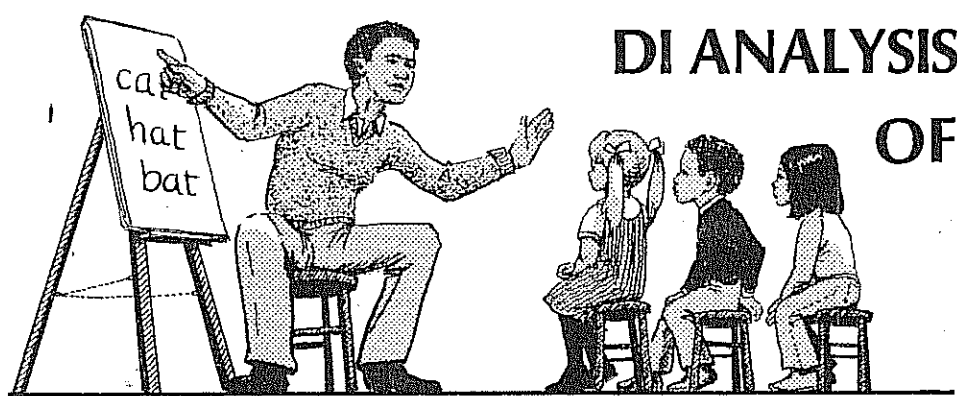
The approach of the Institute is to apply the rules of direct instruction to the curricular needs of severely handicapped students. Procedures for selecting and sequencing examples that DI authors have long advocated for teaching math, reading and language (Becker & Engelmann, 1978; Engelmann & Carnine, 1982) are also proving functional for teaching general case tool use (Colvin & Horner, 1982; Horner & McDonald, 1982), vending machine use (Sprague & Horner, in preparation), and street crossing (Horner & Jones, in preparation). The myth that severely handicapped students do not generalize appears unfounded. As is so often the case, the errors of handicapped students are tied more closely to teaching procedures than to characteristics of the students.

Over the course of the Institute, it is expected that the technology of direct instruction will be expanded to include teaching a wider array of adaptive behaviors. It is encouraging, however, to note that basic DI teaching rules are proving functional for severely handicapped learners and their teachers. Individuals interested in more information about the Extending Competent Performance Research Institute at the University of Oregon are encouraged to contact either Dr. Robert Horner, University of Oregon, 1590 Willamette, Eugene, Oregon 97401 or Dr. Glen Dunlap, University of California at Santa Barbara, Social Process Research Institute, Santa Barbara, California 93106.

### FOLLOW THROUGH TECHNICAL ASSISTANCE FORM

Observation of:	Date:	R L A
Observer:	Lesson:	L- I II III
IMPLEMENTED WELL!	Formats _____	Reinforcement _____
	Signals _____	Correct non-responding _____
	Pacing _____	Correcting errors _____
Assignment:		Individual turns _____
		End-of-lesson _____
		Individual test _____
		Firm-up _____
		Will check back:
Checked back on:		

Figure 3



by Linda Meyer  
University of Illinois

## DI ANALYSIS OF NON-DI PROGRAMS

### A Comparison of Palo Alto and DISTAR Reading Programs

*Ed. Note: A more detailed version of this study appeared in Contemporary Education Review, Volume 1 (3), fall 1982, pages 194-203.*

This summary stems from an analysis of eight beginning reading programs conducted by Beck and McCaslin (1978). In that work (summarized in the *Direct Instruction News*, Winter 1982-83), Beck and McCaslin reviewed Ginn, *Reading 720*; Houghton-Mifflin; Scott Foresman's *Open Highways*; Macmillan's *Bank Street Readers*; Merrill's *Linguistic Reading Program*; Harcourt Brace Jovanovich's *Palo Alto Reading Program*; McGraw Hill's *Sullivan Readers*; and Science Research Associates' *DISTAR Reading I and II*. Their analysis focused on: (a) the general characteristics of each program, (b) letter/sound correspondences, such as how many letters and sounds are taught, and their sequence of introduction, and (c) instructional pedagogy.

The Beck and McCaslin analysis concluded that for compensatory education students, those students most likely to have difficulty learning to read, the meaning-emphasis basal approaches are much less likely to be effective because of their complicated teaching sequences and their lack of direct instruction. The Beck McCaslin summary went on to emphasize the trouble compensatory education students often have learning letter/sound correspondences. They concluded that compensatory education students would succeed best in the code-emphasis programs (*DISTAR*, *Sullivan*, *Palo Alto*, and *Merrill*). But they hastened to add that only in *Palo Alto* and *DISTAR* are blending skills taught and incorporated so that the children use these blending skills to figure out words when they read.

This paper extends the Beck and McCaslin (1978) work by examining the prereading skills, the practice and reinforcement, and the type of instructions provided teachers in the *DISTAR* and *Palo Alto* Programs. These three variables are particularly important because: (a) the number of prereading skills may vary substantially from one program to another; (b) there is some evidence that compensatory education students require extensive practice on new skills and concepts, and that these students need further reinforcement of these skills; and (c) there is considerable evidence that most teachers follow their Teacher's Guides closely. Therefore, it is important to analyze the type and frequency of the instructions these programs provide to teachers.

#### Prereading Skills

*Palo Alto* and *DISTAR* present very different prereading skills. The *Palo Alto* program has only two skills that can truly be considered prereading. These two skills are *sound/symbol correspondence* and *letter name spelling*. In the *sound/symbol correspondences*, two or three configurations of each symbol appear. Practice involves identifying and copying the symbols. The practice is then extended from lower case symbols to capital letters. In *letter name spelling*, the teacher is directed to work with packets of letters on a slotted chart. The children are to arrange the symbols they know.

*DISTAR Reading I* has six prereading skills, and these skills represent a "cumulative program". This means that the six individual skills mesh together so that by the time the children are reading words, they are using all six of these skills. The six prereading skills taught are: *sounds*, *say it fast*, *symbol action game*, *say the sounds*, *sound it out*, and *rhyming*. *Sounds* are taught for 40 symbols. The children learn one sound for each symbol and one configuration for each symbol. *Say it fast*, an oral blending skill, involves saying words at a normal speaking rate after the children hear the words sounded out. Practice on *say it fast* is done first on long words and then on short words to simulate practice on words the children will read first.

*Symbol action game* teaches left-right orientation as the children act out a series of actions depicted on an arrow. The arrow under the pictures indicates movement from left to right. Later the first words and stories the children read also go from left to right on an arrow. This minimizes the chance that the children will start to sound out words in an inappropriate sequence.

In *say the sounds*, the children practice oral sounding out, blending, by saying words slowly that the teacher says at a normal speaking rate. The teachers and students reverse their roles for *say it fast* and *say the sounds* so that the children receive oral practice in both sounding out words and putting them back together orally before they actually start to read words.

In *sound it out*, the students are almost reading. They say the sounds in a word, blending the sounds together. *Rhyming* exercises appear just a few lessons earlier to prepare students for reading words in a series and for reading words that are somewhat difficult to sound out because they begin with a "stop sound" (one you can't hold, like "t").

#### Practicing Skills

The amount of practice students receive on each prereading skill is probably as important as including all of the component skills for prereading. It is well recognized that lower-performing students, those most likely to be in compensatory education programs, need substantial corrected practice in order to master new skills. This section examines the amount of practice in the *Palo Alto* and *DISTAR* programs. Actual tallies of each skill demonstrate both the type of practice in the programs and the amount of practice.

It is difficult to give a precise count of the *Palo Alto* tasks because many choices are left up to the teacher. Teachers and students make up stories with "suggested" vocabularies, so the amount of practice depends upon the stories that the teachers and students develop.

In addition to the stories, the students complete exercises on a workpad. Most of these exercises require the students to trace or match letters, though it is not unusual for several different representations of the same symbol (capital and lower case, or printed and "handwritten," for example) to appear on a single worksheet. On the first two worksheets, students circle words beginning with a (8 times) and circle a (8 times). They also print a eleven times. By the fourth worksheet, there are capital A's as well as lower case a's, and the fifth worksheet repeats the sequence with the second symbol m. By the twelfth worksheet, words appear that the children should read. In short, students receive limited practice on each sound in a variety of exercises; the total repetitions add up to less than three dozen practices.

*DISTAR* repetitions are fairly easy to count in the materials, although all exercises end with instructions to the teacher to "repeat until firm." Teachers must therefore judge when the students are "firm," so the actual number of repetitions will vary, dependent upon the students' skills. In the first 36 lessons, a appears 102 times in the Teacher Presentation Book and 365 times in the student workbook. Lower case a is the symbol presented consistently, and it appears at least 5 times in each lesson for the first thirty-six lessons (180 practices).

*Say it fast* is practiced 37 times in the first three lessons when it is a new skill. *Say it fast* is practiced 288 times in the first 36 lessons, without counting "individual turns" specified for each child, or the number of repetitions the teacher must complete in order to "firm" the group.

The remaining prereading skills could be counted in similar ways, but it seems unnecessary to go into the detail. Even a cursory analysis shows that the program provides a great deal of practice for each skill.

The number of prereading skills and the amount of practice in the program on each skill are important indications of careful task analysis and practice, but equally important is the specificity of the program's instructions to the teacher. The third section of this analysis compares the level of instruction for teachers in *Palo Alto* and *DISTAR*.

#### Teachers' Instructions

The *Palo Alto Program* provides generally inconsistent amounts of detailed instruction to teachers. In some activities, teachers receive step-by-step directions for teaching. In other ac-

tivities, the teacher is simply directed to, "extend" the practice or development of a sound or word. In still other activities, the teachers are to teach from a detailed script.

The *DISTAR* program, on the other hand, has scripts for every part of each lesson. Teachers work from the *Teacher Presentation Book*. This book contains scripts for all of the exercises in each lesson. There are scripts for all of the pre-reading exercises, reading vocabulary, stories, and the *take home books*. Scripts appear in early exercises for correcting student mistakes so that when a student makes a mistake, the teacher can launch into an appropriate correction procedure. The only exercises that lack a script are the instructions to the teacher to, "Repeat until firm." These instructions appear at the end of virtually every exercise. Thus, these instructions direct the teacher to repeat the task until the students respond without errors or hesitation. These instructions specify *what* the teacher should do without determining the number of times tasks will be presented or the precise sequence that the teacher should follow.

#### Discussion

In each of these three major areas, prereading skills, practicing skills, and teachers' instructions, there are marked differences between the *Palo Alto* and *DISTAR Programs*. There are more prereading skills taught in *DISTAR*, and there is substantially more practice on the prereading skills. In addition, the instructions to the teachers are more consistent and detailed in the scripts in the *DISTAR* program.

There are several implications for teachers to draw from the comparisons of these two programs and these three areas. First, when thinking about compensatory education students, the adequacy of the prereading skills is particularly important. Ask two questions. Are all of the skills students need taught? Are these skills taught efficiently and with enough practice? If a program calls for students to sound words out and then identify the words, it is important to teach all of the component tasks in these skills. Compensatory education students must be *taught* all of the steps in the sequence; they should not be expected to figure out on their own how to put the skills together. Second, the amount of practice that compensatory education students need to master a new skill has not been documented precisely. However, there is substantial agreement that practice is important for lower-performing students and that the amount of practice the students need will effectively differentiate higher and lower performing students. Therefore, it is particularly important for teachers looking at materials for lower-performing students to see how much practice the programs include for each of the skills.

There is little documentation of how specific a programs's instructions to the teachers should be. Some educators argue vehemently against scripting, while others view scripts as recipes or parts in a play—one aspect of "lesson planning" that is done. Scripts can reduce teachers' preparation time greatly and allow them to concentrate on other aspects of teaching. So, some see scripts as confining, while others see them as liberating—liberation from preparation

Continued on Page 26

# Reading Mastery: Formula for Success



**Reading Mastery** teaches the skills that students need for success. Students learn new skills at every level, in every book, in every lesson. Skills are introduced gradually, in carefully measured steps, so that every student can master every skill. Reading Mastery has six separate programs and three major stages — Learning Initial Skills, Building New Skills, and Mastering Advanced Skills. Each stage teaches new skills and reviews old ones.

**Learning Initial Skills**  
Reading Mastery I  
Reading Mastery II

- Fast and efficient teaching of all beginning reading skills.
- Systematic introduction of letters and sounds.
- Word-attack strategies that allow students to decode hundreds of new words.
- Basic comprehension activities that teach students how to understand what they read.

**Building New Skills**  
Reading Mastery III  
Reading Mastery IV

- Careful teaching of inference and reasoning.
- Continuous building of vocabulary and reading fluency.
- Gradual introduction of complex sentence forms.
- Application of comprehension skills in a variety of contexts.

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- Extensive independent reading.
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Representative call me.

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# NINTH ANNUAL EUGENE DIRECT

August 8-12, 1983

## Training and Information on Direct Instruction Techniques

Choose one A, one B, one C, and one D:

- A Introduction to Direct Instruction
- A Fine Tuning Direct Instruction Skills
- A Barriers to Implementation

- B Teaching Beginning Reader
- B Reading Mastery 3-6
- B Teaching Beginning Language Skills
- B Teaching Reading Accuracy and Fluency
- B Teaching Oral and Written Language and Comprehension Skills
- B Effective Spelling Instruction
- B Advanced Arithmetic
- B Overview and Implementation of Direct Instruction
- B Generalized Compliance Training
- B Classroom Management—Elementary Level
- B Transition from DISTAR

- C Teaching the Beginning Reader
- C Teaching Reading Accuracy and Fluency
- C Teaching Oral and Written Language and Comprehension Skills
- C Effective Spelling Instruction
- C Classroom Management—Secondary Level
- C Evaluation of Instruction
- C DISTAR Reading II
- C Arithmetic I & II
- C Supervision of Direct Instruction Programs
- C Theory of Instruction
- C Teaching the Extremely Low-Performing Learner

- D Introducing Library Books to First Graders
- D DISTAR Reading Fast Cycle
- D Teaching Facts in the Content Areas
- D Promoting Direct Instruction to Your District
- D Classroom Management
- D Cursive Writing
- D Supplemental & Transitional Activities Related to DISTAR
- D Language I for ESL
- D Research on Direct Instruction
- D Expressive Writing
- D Computers in the Classroom
- D Direct Instruction and Mainstreaming

## INSTRUCTORS

Siegfried Engelmann, Wesley Becker, Doug Carnine, Randy Sprick, Geoff Colvin, Phyllis Haddox, Jane Cote, Gary Johnson, Maria Collins, Linda Youngmayr, Jean Osborn, Marcy Stein, Kim Weiherman, Sam Miller, Susan Hanner, Leslie Zoref, Marilyn Sprick, Janice Jensen, Karen Davis, Annemieke Golly, Jerry Silbert, Lynn Anderson-Inman

**PLACE:** Eugene Hilton Hotel and Conference Center, Eugene, Oregon

**TIMES:** August 8-12, 1983 Monday - Friday 8:30 am to 4:00 pm

**FOR:** Teachers of Regular and Special Education, Supervisors, Administrators, and Aides of all grade levels.

**FEE:** \$100.00 for the 5-day conference

## The Setting

This year the conference will be an extra special event. It will be held at the Eugene Hilton Hotel and Conference Center, located in Eugene downtown. The Hilton offers a number of extras...special room rates for participants, free transportation to and from Mahlon Sweet Airport, a health club for use by their guests, and free parking under the hotel. Participants may rent bicycles at the front door of the hotel and explore the miles of bike paths that have made Eugene a tourist attraction for many years. The downtown location is just steps away from Eugene's finest restaurants and shopping centers. The Hult Center for the Performing Arts is right next door. After the conference, one may wish to extend their stay in Oregon and travel 60 miles to the West and visit Oregon's spectacular coastline or travel 40 miles to the East for an unparalleled view of the Cascades!

Conference sessions are designed to further the technical competence and confidence of teachers, aides, supervisors and administrators whose goal is to prevent failure in the classroom and to promote educational excellence. Innovators, authors and trainers will share the latest information about Direct Instruction and provide intensive training on current DI programs.

The schedule for the five-day conference provides an excellent opportunity to share experiences with people from around the world who are interested in Direct Instruction. To help you renew old friendships or start new ones, a picnic has been planned for Monday afternoon.

## Schedule

### Monday, August 8

Registration — 8:00 - 9:00 am  
Opening Assembly — 9:00 - 9:30 am  
Stan Paine, Wesley Becker & Siegfried Engelmann will speak.  
"A" Sessions Meet — 9:45 - 11:30 am  
Lunch Break — 11:30 - 1:00 pm  
"A" Sessions Meet — 1:00 - 4:00 pm  
Get Acquainted Picnic (free to participants) 4:30 - dusk

### Tuesday through Thursday, August 9-11

"B" Sessions Meet — 8:30 - 11:30 am  
Lunch Break — 11:30 - 1:00 pm  
"C" Sessions Meet — 1:00 - 4:00 pm  
The Association for Direct Instruction will have its Third Annual Meeting at 4:00 on Thursday, August 11.

### Friday, August 12

"D" Sessions Meet — 8:30 - 1:00 pm  
Closing Session — 1:05 - 1:45 pm

## SESSIONS OFFERED

There are 33 different sessions offered during the 5-day conference. Participants may choose to attend 4. Sessions are either training or informational sessions. The focus of training sessions is on specific teaching behaviors. Task practice is involved in each of these sessions. The goal of Informational sessions is to provide the kind of detailed information needed to implement successful techniques or to understand the topic.

Sessions are scheduled in four time periods. Each participant may choose one session during each time period. So

that no session becomes too large to be effective, some multiple sessions are offered. More may be added as necessary. "A" Sessions will offer 5 hours of training. Please note that you need to attend the "A" Session that reflects your current skill level. This is important to your training the rest of the week. "B" & "C" Sessions offer 9 hours contact time and "D" Session will provide 4½ hours of class time. All sessions focus on current techniques and materials.

1. **Introduction to Direct Instruction.** For those new to DI. For all teachers inexperienced in Direct Instruction (teachers who have never used a DI program or who have never received training). General information about the different DI programs and training on the basic techniques used in all programs—pacing, signalling, correcting, and following the formats presented in the programs. (A) Phyllis Haddox, Karen Davis, Jane Cote.

2. **Fine Tuning of Firming Skills.** For those Experienced in DI. For experienced Direct Instruction teachers only (those who have taught the programs or who have received training). Fine tuning of firming skills. Procedures for teaching skills so that students learn them thoroughly and are therefore able to move faster and faster through the programs (rather than bogging down). (A) Siegfried Engelmann, Maria Collins, Linda Youngmayer, Marcy Stein.

3. **Barriers to Implementation.** For administrators concerned with Direct Instruction implementation. Overview of problems in educational systems that create resistance to implementation of DI programs and recognition of pro-

gram success. Also, possible strategies for dealing with specific problems. (A) Doug Carnine.

4. **Teaching the Beginning reader.** Regular K-1, non-readers in remedial 1-12. How to teach beginning students to read and how to teach remedial students—those who read very poorly or not at all. This session will provide training in Word Attack Basics® (Decoding A of the Corrective Reading series), DISTAR® Reading I, DISTAR Fast-Cycle, and Teach Your Child to Read in 100 Easy Lessons (a new Direct Instruction program for teaching reading at home). Participants learn the basic information and skills needed to implement the programs—placement, acceleration, scheduling, grouping, presenting prereading exercises. (B & C) Phyllis Haddox.

5. **Reading Mastery III, IV, V & VI.** Regular grades 2-6 or for students performing on grade level 3-6. These programs present a careful sequence for teaching comprehension and decoding skills to students who have mastered the basic skills. Programs provide for meeting the full range of comprehension and decoding objectives, include management systems for monitoring student progress, and teach all component skills (vocabulary, rules, information, map skills, context analysis) needed for students to completely understand the expository and fictional selections presented in the program. (B) Susan Hanner, Leslie Zoref.

6. **Teaching Beginning Language Skills.** Regular class K-1, remedial 1-6, ESL 1-12. For teachers of basic language in preschool through grade 2, and for teachers of English as a second language. Focus is on the language of instruction—polars, if-then, following directions, comparatives, prepositions, etc.—with emphasis on statement production. Includes a tract on how to apply concepts to new situations. Training on Espanol to English will be covered, as will using DISTAR Language I & II with students for whom English is a second language. Participants will receive a Language I & II Teacher's Guide. (B) Kim Weiherman.

7. **Teaching Reading Accuracy & Fluency.** Regular class, low performers 4-8, remedial 4-adult. How to teach students to accurately decode, increase rate, build vocabulary, and read for information in books, newspapers, and magazines. Training will be provided on Decoding Strategies® (Decoding B) and Skill Application® (Decoding C) of the Corrective Reading Series. Programs may be used developmentally or remedially. (B & C) Gary Johnson.

8. **Teaching Oral & Written Language & Comprehension Skills.** Regular class 4-6, remedial grades 4-12. Developmental and remedial techniques for effective presentations with primary age students through adults. Based on Thinking Basics® (Comprehension A), Comprehension Skills® (Comprehension B), Concept Applications® (Comprehension C) and DISTAR Language III—Direct Instruction programs that include presentations of skills such as deductions, inductions, analogies, following instructions, vocabulary building, editing, writing and logical analysis. (B & C) Sam Miller.



# INSTRUCTION CONFERENCE

9. **Effective Spelling Instruction.** Regular grades 2-6, remedial 2-adult. Specific information and training on SRA's Corrective Spelling Through Morphographs® and the Spelling Mastery Series®, a five-level basal spelling program that integrates the morphographic analysis with sound-symbol analysis and whole-word analysis. The series teaches the spelling of over 15,000 words. Session explains the use of these programs in regular and special settings. (B & C) Maria Collins.

10. **Corrective Arithmetic.** Regular 1-6, remedial 2-adult. Procedures for teaching students who lack understanding of fractions, decimal operations, basic word problems and equations. Also for firming addition, subtraction, multiplication, and division—facts, operations and story problems. Specific training on SRA Corrective Math and Math Modules. (B) Marcy Stein.

11. **Overview and Implementation of All Direct Instruction Programs.** Designed to familiarize administrators and teachers with all the currently available Direct Instruction programs. Time will be spent examining the purpose and objectives of each program and the recommended implementation considerations such as: placement, group size, what types of students, grade level, transition to traditional programs, and integration of each program with other DI programs. (B) Jean Osborn.

12. **Generalized Compliance Training.** For teachers of seriously disabled and behaviorally disordered students. Procedures for dealing with extreme behavior problems (autistic, severely emotionally disturbed, and unmanageable low-performers). Specifies procedures for inducing compliance and for achieving generalizations of compliant behaviors to various settings.

Also introduces specific teaching principles and criteria for successful teaching of low-performing, non-compliant students. (B) Geoff Colvin & Siegfried Engelmann.

13. **Solutions to Classroom Management Problems in grades K-6.** Designed for teachers of elementary students and administrators interested in improving the behavior and motivation of students. The session focuses on practical strategies for correcting common individual and school-wide problems such as talking back, excessive noise, failure to complete independent work, and cafeteria and recess problems. The session takes participants through step-by-step procedures for solving problems that currently exist in the classroom. At the end of the session, participants will be able to implement several strategies for changing behavior problems and increasing student motivation. (B) Randy Sprick.

14. **Transition from DISTAR to a Basal Reader.** Addresses the concerns of administrators, special educators and regular teachers who have students who must work in a basal text. The session will cover the critical differences between major beginning reading programs and how these differences affect learning. Participants will learn "when" transition may be appropriate for "which" students. Guidelines will be given for providing supplementary work on traditional skills while students are in DISTAR Reading and for use of DI techniques with basal lessons. (B) Marilyn Sprick.

15. **Classroom Management—Secondary Level.** Designed to address the unique management and discipline problems at middle school, junior high, and senior high school. The major objectives of this session include strategies to eliminate overt misbehavior and in-

crease motivation and self discipline. Time will be spent on how to use point systems to reach secondary level students. (C) Randy Sprick.

16. **How to Evaluate Instruction.** Provides the participant with a general model to follow in designing procedures for instructional program evaluation. The session covers material in Becker & Engelmann, *Teaching III, Evaluation of Instruction* (which participants will receive). Topics covered are "feasible designs", selection of norm-referenced and criterion-referenced tests, "major pitfalls", "background variables to consider". (C) Wesley Becker.

17. **DISTAR Reading II.** Regular class 1-3, remedial 2-6. Training in Direct Instruction techniques to teach students following instructions, deduction skills, information reading, and reading fluency. The program builds on DISTAR Reading I skills, presents a transition to traditional orthography, systematically introduces advanced word-attack skills, independent reading and various comprehension skills for dealing with expository as well as fictional selections. Participants will receive Reading II Teacher's Guide. (C) Jane Cote.

18. **DISTAR Arithmetic I & II.** Regular K-2, remedial students performing on grade 1. Rationale, teaching procedures, and role-playing practice in facts (addition, subtraction, multiplication, and division), fractions (reading, multiplying, and reducing), counting money, objects, events, telling time, metric and standard measurement, ordinal counting, equivalencies, and story problems involving many problem types. Participants will receive Arithmetic I & II Teacher's Guide. (C) Marcy Stein.

19. **Supervising Direct Instruction Programs.** Information for supervisors and administrators who have experience

teaching Direct Instruction programs. Techniques for implementing DI, pre-and in-service training of teachers and aides, and effective monitoring will be discussed. Participants will receive sample forms and charts useful in establishing an effective supervision system. (C) Linda Youngmayer.

20. **Theory of Instruction.** Overview of the book *Theory of Instruction*, by Engelmann & Carnine (Irvington, 1982). Basic principles for presenting concepts, teaching operations, sequencing examples providing repetition, and assuring generalizations of what is taught. Examples relate to DISTAR Reading, Language and Math, also, Corrective Reading. (C) Siegfried Engelmann.

21. **Teaching the Extremely Low-Performing Learner.** Technical information on how to teach the severely or profoundly retarded learner. Techniques for establishing a basis of instruction, firming responses, expanding tasks, inducing generalizations and designing appropriate programs and schedules. Techniques for dealing with particular learning problems such as short memory, short attention span, echolalia, latency in responding, superstitious behavior during multiple step tasks, and highly restricted receptive language. NOTE: This session is not designed to deal with inappropriate behavior. Generalized Compliance Training has this focus. Rather, it is designed to provide information on teaching variables for low-performers. (C) Geoff Colvin, Kim Weiherman.

22. **Introducing Library Books to First Graders.** Regular grade 1, remedial grades 1-3, Training based on I Love Library Books (C.C. Publications), a program for grade 1 that introduces a sequence of 37 library books. Specified procedures are given for introducing

Continued on Page 23

## Conference Registration Form

**Where-When.** To be held August 8-12, 1983, at the Eugene Hilton and Conference Center, in downtown Eugene, Oregon.

**How to Pre-Register.\*** Please fill out application form. Enclose with check or school district purchase order for the proper fee. Send application to the Association for Direct Instruction. Pre-registration before July 1 guarantees space in preferred sessions. Any session with less than 20 participants may be cancelled.

\*This form covers conference pre-registration only. This does not constitute pre-registration for college credit or room reservation.

**Fees and Discounts.** The conference registration fee is \$100.00. Association members receive a 20% discount. Group reservations of 5 to 9 participants receive a 10% discount, groups of 10-19 receive a 20% discount. For groups of 20 or more, call for a quotation. Ask for Bryan at (503) 485-1293. The member and group discounts cannot be used together. Choose the discount that will benefit you the most. The fee does not include lodging or meals with the exception of the picnic, and coffee each morning. All training materials are included in the fee.

**Hilton Room Rates.** The rate for a single is \$32.00 a day. Doubles will be \$44.00 (\$22.00 per person), plus tax. If you are interested in staying at the Hilton please check "yes" on the pre-registration form. We will then put the hotel in touch with you. DO NOT SEND ANY ROOM MONEY TO THE ASSOCIATION.

**College Credit.** An optional 1, 2, or 3 units of college credit through the University of Oregon are available at an additional cost of \$26.00 for each unit. Persons interested in college credit should so indicate on the enclosed pre-registration form. We will send appropriate information on credit along with conference pre-registration confirmation.

Please print your name, address and phone clearly. Use an address at which we can reach you before the conference.

Name \_\_\_\_\_ Phone (\_\_\_\_) \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Have you had previous experience with Direct Instruction? \_\_\_\_\_

What taught? \_\_\_\_\_ How many years? \_\_\_\_\_

I would like to register for the following (list one "A," one "B," one "C," and one "D" session):

"A" \_\_\_\_\_

"B" \_\_\_\_\_

"C" \_\_\_\_\_

"D" \_\_\_\_\_

I am an Association for Direct Instruction member: ☐ Yes ☐ No

I will attend the picnic: ☐ Yes ☐ No

Please send college credit information: ☐ Yes ☐ No

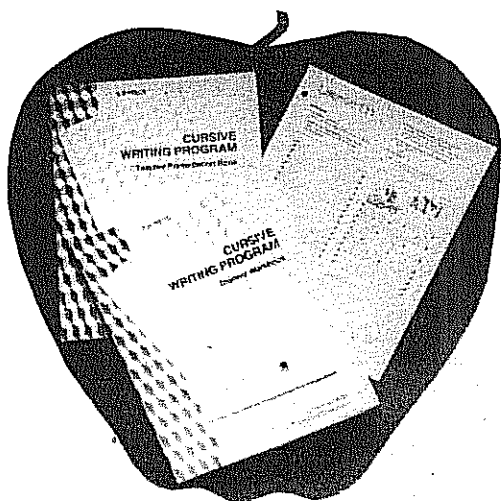
I will be staying at the Hilton. Please have them contact me: ☐ Yes ☐ No

I would like to be doubled up with another participant: ☐ Yes ☐ No

PLEASE RETURN THIS FORM WITH YOUR CHECK OR DISTRICT PURCHASE ORDER TO:  
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For Office Use Only: Fee \_\_\_\_\_ Check \_\_\_\_\_ PO # \_\_\_\_\_ By \_\_\_\_\_

# APPLES FOR TEACHER



## Cursive Writing Program

**AUTHORS** Samuel Miller, Siegfried Engelmann  
**RANGE** Third and fourth grade students or older students poor in cursive skills.

**DESCRIPTION** The *Cursive Writing Program* is a 140 lesson direct instruction program that teaches how to form the various letters, create words, write sentences, and write faster and more accurately. Special features include a simplified orthography, emphasis on high-letter combinations, and design features such as the slant arrow to insure correct paper placement. Exercises require only

15-20 minutes of daily work.

**ADMINISTRATION** The program is suitable for individuals, small groups, or an entire class.

**COMPONENTS** *Teacher Presentation Book* includes • Detailed specifications for each lesson • Complete information and reproducible material for placement testing • Information on how to supplement the program • *Student Workbook* includes • Practice papers for each lesson • Point Summary Chart

440j	<i>Cursive Writing Program</i> Teacher Presentation Book	25.00
441j	<i>Cursive Writing Program</i> Student Workbook (1 ea.)	4.00
442j	<i>Cursive Writing Program</i> Student Workbook (pkg. of 5)	19.95

## I Love Library Books

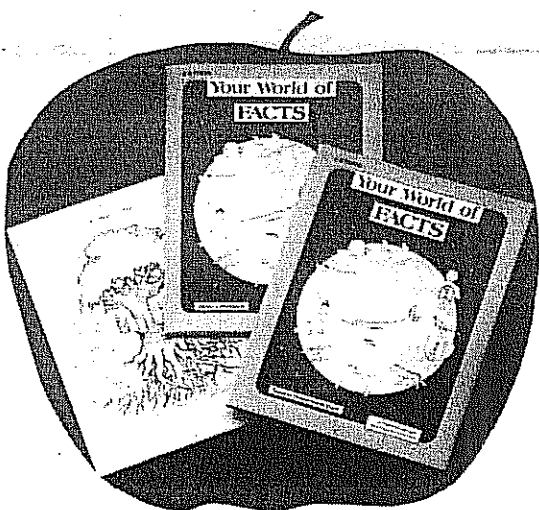
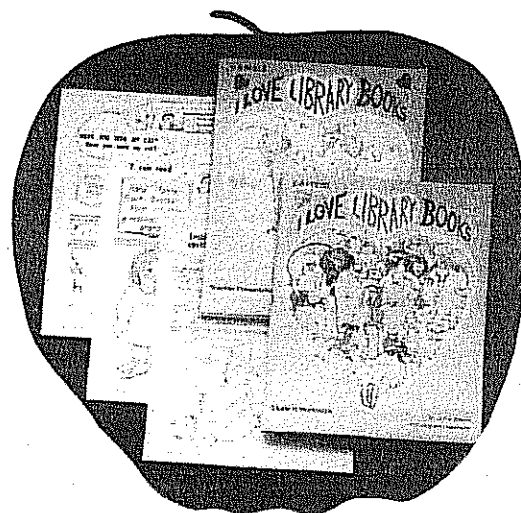
**AUTHORS** Janice Jensen, Siegfried Engelmann  
**RANGE** Students with first grade reading skills.

**DESCRIPTION** *I Love Library Books* provides details for introducing 37 popular children's books as an integral component of a first grade reading program. A computer analysis has keyed each book's vocabulary with the words presented in 8 major basal reading programs so that the selected books will match the child's skills and ensure a successful reading experience. Children using this program usually start reading library books by February.

**ADMINISTRATION** Either the librarian or teacher may administer this program.

**COMPONENTS** *Teacher Presentation Book* includes • Complete lesson plans for introducing 37 books • Computer analysis chart matching each book with a specific page and text of 8 basal reading programs • Procedures for record-keeping and assessment • Creative, time-efficient reinforcement activities • *Student Workbook* includes • Introductory sheets for each book • Student record sheet • Supplementary worksheets

444j	<i>I Love Library Books</i> Teacher Presentation Book	25.00
445j	<i>I Love Library Books</i> Student Workbook (1 ea.)	4.00
446j	<i>I Love Library Books</i> Student Workbook (pkg. of 5)	19.95



## Your World of Facts

**AUTHORS** Siegfried Engelmann, Karen Davis, Gary Davis

**RANGE** Third through fifth grade students, and remedial learners who read on at least the beginning third grade level.

**DESCRIPTION** *Your World of Facts* is designed to supplement science and social studies programs, preteaching key facts and relationships. The series was written in response to the problem that students are often so concerned with the vocabulary of science and social studies texts that they fail to understand the concepts. Simple charts and pictures present each set of facts, and

a game format provides impetus and practice. The 40 lessons require 45-50 minutes each, but only 15 minutes of teacher-directed time.

**COMPONENTS** *Teacher Presentation Book* contains guide information and instructions for each lesson • *Student Workbooks* are nonconsumable and contain 25 topics, including the solar system, the respiratory system, continents, oceans, and the internal combustion engine • Reproducible scoresheet • Reproducible certificate

448j	<i>Your World of Facts</i> Teacher Presentation Book	25.00
449j	<i>Your World of Facts</i> Student Workbook (1 ea.)	4.00
450j	<i>Your World of Facts</i> Student Workbook (pkg. of 5)	19.95

## Speed Spelling

**AUTHOR** Judy Proff-Witt

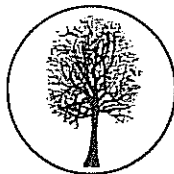
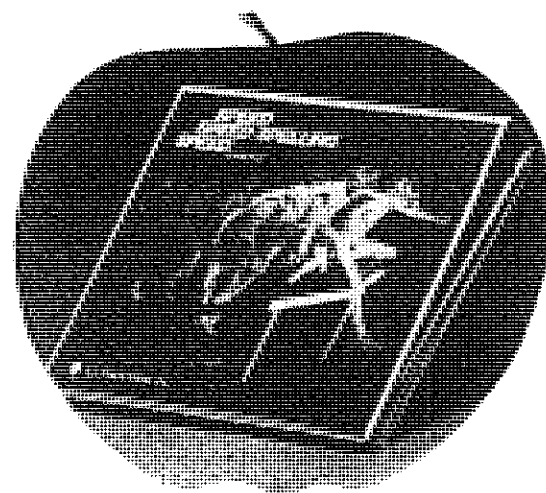
**RANGE** Learning disabled and retarded children who have not mastered grade school spelling skills.

**DESCRIPTION** *Speed Spelling* is an individualized, phonic program designed to increase spelling speed and accuracy following a systematic development of sound-to-letter correspondence. A placement test determines each student's level. Each of the 93 lessons teaches word reading, word writing, and sentence writing, and contains instructional objectives and detailed directions.

**ADMINISTRATION** Teachers, students, aides, or other paraprofessionals may act as tutors.

**COMPONENTS** *Manual* includes • Placement test • Cycling tests • 93 lessons with complete instructions • Adaptation procedures for classroom settings • *Student Book* includes a record of performance and is the only consumable part of the program • *Word List Packet* contains large-letter words and is reproducible

252j	<i>Speed Spelling Kit</i> , manual, 20 Student Books, plus Word List Packet	74.95
253j	<i>Speed Spelling Student Books</i> (pkg. of 20)	9.40



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# Field Oriented PhD. Program

The primary objective of the program is to teach the administrative and practical research skills that are implied by the supervisor's role, teach training behaviors, and consult on field implementations. The program will allow qualified candidates to earn money while attending school.

The program uses existing sequences with some modification. It includes:

1. A sequence on research methods.
2. A sequence on the Design of Instruction. The content will include the type of information that is needed for supervision diagnosis, and field implementations.
3. A sequence on logical critiques and writing skills. The first will focus on critiques of research articles, policy arguments, etc. The second course will concentrate on reviews, summaries, and editing. The third is a grant writing course.
4. College-course teaching will be part of the first-year and second-year sequence. During the first year, the candidate will be part of a team involved in teaching one of the Direct Instruction courses (the candidate will be responsible for a specific part). Also, this course will be used to assess the candidate's presentation skills and to provide individual remedies. During the second

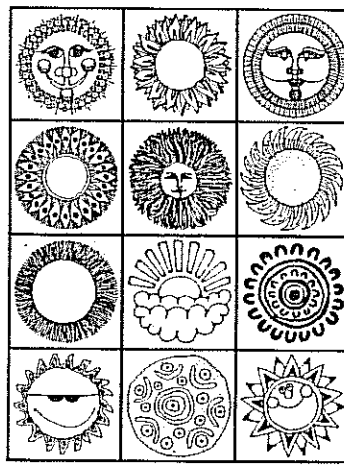
year, the candidate will engage in two terms of college-course teaching; again in one of the Direct Instruction programs, including possible involvement in the Design of Instruction or teaching the supervisory practica.

5. The supervisory practica will be scheduled for two terms each year. These practica will focus specifically on in-classroom management of trainers and their students. During the first year, supervisors will be involved with students in the direct instruction practica. During the second year, the supervisor will focus primarily on the training of first-year doctoral candidates.

6. The preservice-inservice practica will be presented during two terms of the second year. The focus of these will be an extension of prescriptive techniques for dealing with observed problems, procedures for conducting inservice sessions, use of data for identifying priorities and topics, etc. The focus will be on very specific behaviors, with the candidate required, in the spring term of the second year, to use field data derived from supervision to design, execute, and take data on the effectiveness of the interservice remedies provided.

7. The third year will be reserved primarily for the dissertation and course pursuits related to the dissertation.

## University of Oregon Summer Session June 20–August 12, 1983



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## DI Conference Sessions Offered

Continued from Page 21

vocabulary and comprehension activities. Also procedures for reinforcing specific decoding and comprehension skills. The sequence of library books is keyed to all basal reading programs. (D) Janice Jensen.

23. **DISTAR Reading Fast-Cycle.** Regular grades K-1, remedial students performing on first grade level. Training for teachers of bright and ready 5 and 6 year old children or older non-readers. How to teach Reading I skills (see #1) in less time. How to use Fast-Cycle as a review of basic skills for children entering Reading II. Participants receive Fast-Cycle Teacher's Guide. (D) Karen Davis.

24. **Teaching Facts & Fact System in the Content Areas.** Regular 3, remedial 3-12. Training on super-effective procedures for using visual spatial displays to teach various topics in social studies and science. Based on the program *Your World of Facts, Levels I & II* (C.C. Publications). Training shows how to introduce fact systems and how to firm even very low performers through the game format that is part of the program. Shows how to develop visual-spatial displays for teaching difficult to teach relationships. (D) Gary Davis.

25. **Promoting Direct Instruction to your District.** For teachers and administrators. Identification of specific problems that should be anticipated, and suggestions for solving the problems

or possibly pre-empting them. Suggestions include techniques for communicating with administration, parents, teachers, and the public. (D) Phyllis Haddox.

26. **Solutions to Classroom Management Problems.** This workshop is designed for teachers of elementary students and administrators interested in improving the behavior and motivation of students. The session focuses on practical strategies for correcting common individual and school-wide problems such as talking back, excessive noise, failure to complete independent work, and cafeteria and recess problems. The session takes participants through step-by-step procedures for solving problems that currently exist in the classroom. At the end of the session, participants will be able to implement several strategies for changing behavior problems and increasing students motivation. (D) Randy Sprick.

27. **Cursive Handwriting.** Regular grade 3, remedial 3-12. Participants in this session will receive training on Englemann & Miller's *Cursive Handwriting Program* (C.C. Publications). Direct Instruction techniques for teaching new letters, slant discrimination, cursive reading, rate work, and other aspects of handwriting will be covered. (D) Sam Miller.

28. **Supplemental & Transitional Activities Related to Distar.** Regular K-2,

remedial 1-4. Information on structuring classrooms for independent activities. Suggestions for scheduling and management. Specific examples for seatwork, learning center games, and station activities explained and demonstrated. (D) Jane Cote.

29. **Language I & ESL.** For teachers of non-English speaking students. Techniques for using DISTAR Language I as the core of a program for young non-English-speaking children. Specific guides for using auxiliary material, for reorganizing some lesson parts of Language I, and for applying skills taught in the program to the daily school routine. (D) Annemieke Golly.

30. **Research on Direct Instruction.** This session will define the special features of Direct Instruction, review the current research findings and provide participants with an up to date summary of research on Direct Instruction. Topics include preschool studies, Follow Through, and related primary-school studies, findings with special education populations and with secondary school students. Studies of DISTAR, Corrective Spelling, and Corrective Reading programs are included. Directions for future research into the problems of vocabulary comprehension and mainstreaming will be discussed. (D) Wesley Becker.

31. **Expressive Writing.** For regular classroom teachers in grades 2-4,

remedial 4-6. Overview and training in specific procedures for using Level I of the *Expressive Writing Program* (C.C. Publications). The program teaches the most difficult first steps in expressive writing through a basic sentence-writing strategy and an organization strategy that are applied to simple reporting and interpreting activities. Students learn editing, punctuation, and paragraphing skills that give them a strong foundation for future skill expansion. (D) Jerry Silbert.

32. **Computers in the Classroom.** This session will not assume any knowledge of programming nor provide instruction in computer programming. The focus is on computer assisted instruction: (1) writing courseware on authoring systems that do not require knowledge of programming; (2) evaluation of courseware, with an emphasis on instructional adequacy; (3) illustration of quality software and how they might be used. (D) Doug Carnine.

33. **Direct Instruction and Mainstreaming.** This session will explore several ways Direct Instruction can be used to facilitate the successful integration of handicapped students in regular classrooms. Techniques appropriate to both special and regular education will be incorporated. Special emphasis will be given to strategies for promoting the transfer of skills across settings. (D) Lynne Anderson-Inman.



# Theory of Instruction

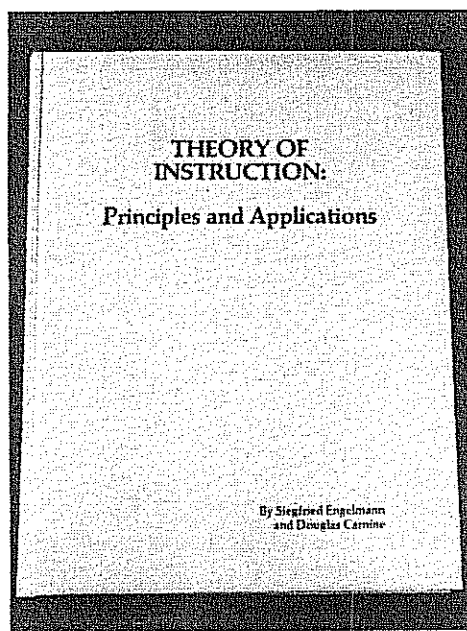
Principles and Applications

By Siegfried Engelmann  
and Douglas Carnine  
Published by Irvington Press, 1982  
(385 pp/\$29.95)

Note. This book may be ordered from the Association for Direct Instruction by members for \$20, non-members \$25. Add \$1 for shipping costs.

Most educators have probably wondered at one time or another why there are so few apparent interactions among the massive body of instructional materials available to teachers, the large collection of educational research, and the few existing theories of instructional design. Instructional materials, more often than not, seem to be based upon nothing more sophisticated than their resemblance to other instructional materials. Much educational research is conducted in a vacuum, unguided by any uniform theory of instructional design, void of practical implications for the design of instruction, and often lacking any reference to materials of instruction. Serious practitioners of other disciplines, viewing this state of affairs from a distance, often conclude that education is in a state of chaos. The charge is not easy to defend.

*Theory of Instruction: Principles and Applications*, has the potential for bringing order out of the chaos. There are several features of this book that lead us to such an optimistic conclusion. First and foremost, *Theory of Instruction* explains in great detail specific instructional components for effectively teaching the widest range of both cognitive and motor tasks. Typically, instructional design "theories" explore in detail only those components of instruction that come before or after the actual design of the instruction—components such as the formulation of goals and objectives or the evaluation of instruction. The authors of such theories seldom offer more than a few pages of general observations on the actual design of the instruction, which should be the core of any instructional design model. Thus, it is not surprising that no instructional design theorist has applied his or her theory to the actual development of instruction in a way that even approximates what Siegfried Engelmann has done. Engelmann has applied his exhaustive and highly detailed instructional design theory to more than 30 widely used, published instructional programs that have been proven effective time and time again. Not only has impressive research been conducted on the programs based upon *Theory of Instruction*, but many studies have been done on individual components of the



theory as well. These studies are summarized in a later section of the book. Because of this unique marriage of instructional design theory, materials of instruction, and educational research, every educator should find *Theory of Instruction* at the very least immensely interesting, and potentially quite practical.

The book is divided into nine major sections, with 2 to 5 chapters in each section. The section titles are: Overview of Strategies, Basic Forms, Joining Forms, Programs, Complete Teaching, Constructing Cognitive Routines, Response-Locus Analysis, Diagnosis and Corrections, Research and Philosophical Issues.

Different readers are likely to appreciate *Theory of Instruction* for different reasons. We can identify at least three different groups for whom this is probably true: advocates and teachers of Direct Instruction, people who aspire to design instruction, and other educators, including detractors of Direct Instruction. We will discuss possible values of the book for each of these groups.

## Advocates of DI

Direct Instruction teachers and other advocates of DI frequently pose the question, "What is it, exactly, that makes DI work so well? What is the key element?" Some think it is adequate practice. Others attribute the success of DI programs to teacher-directedness and scripts. And still others believe it is group responding, or correcting all errors. The appeal of each of these overt characteristics of DI programs is strong, as is the appeal of all of them taken together. Yet, it is not difficult to envision a largely ineffective instructional program that is teacher-directed, scripted, and highly structured, and that requires students to respond together, prescribes that every error be corrected, and provides a great deal of practice. Why, then, do these programs work?

In an interview with the *Eugene Register Guard* (Dec. 4, 1977), Engelmann himself answered this question by saying, "There is no big thing. It's all pick, pick, picky details. Direct Instruction is just attention to a lot of tiny details." Readers of *Theory of Instruction* will begin to appreciate the massive number of details that are controlled in DI programs, just how tiny some of those details are, and why each is important. Readers will come to appreciate that simply changing the order of two examples in a DI program can cause unnecessary confusion for some students, and why. Details that some DI teachers may be tempted to view as unnecessarily laborious will suddenly reveal themselves to be among the hundreds of small, but critical, parts that account for the success of the whole. Nothing short of reading *Theory of Instruction* from cover to cover will account adequately for the effectiveness of DI programs. Readers should be forewarned that the strong commitments they may have to more global characteristics of DI programs, such as reinforcement techniques or model-lead-test patterns, will seem simple-minded in retrospect.

## Instructional Designers

Instructional designers are an obvious audience for *Theory of Instruction*. As the subtitle implies, the book is rich in both instructional design principles and examples of how those principles should be applied to designing lessons covering a broad range of subject areas, student performance levels, and to a lesser extent, instructional delivery modes. (Although many of the examples illustrate teacher-delivered instruction, we ourselves have had few problems applying the principles to computer-based education.) The larger percentage of the book consists of highly detailed, how-to-do-it sections.

It should not be assumed, however, that after having read *Theory of Instruction*, one will necessarily be in a position to design lessons that approximate the effectiveness and efficiency of Engelmann-generated instruction. There are several reasons for this. First among them is the fact that simply mastering the large number of principles and the various conditions under which each applies is a massive undertaking, that, for most of us, probably requires at least several readings of the book and several corrected attempts at applying the principles.

At any given point in the instructional design process, several design principles apply interactively. At the very least, the designer must remember which principles apply at the moment, and the conditions that control the specific applica-

Continued on Page 25

## Adding Quality to the Formula for Educational Equity

*Placing Children in Special Education: A Strategy for Equity.* Kirby Heller, Wayne Holtzman and Samuel Messick. Washington, D.C.: National Academy Press, 2101 Constitution Ave., N.W. 20418, 1982.

This book presents the findings, conclusions and recommendations from a two year study by a blue-ribbon panel of the National Academy of Sciences (Commission on Behavioral and Social Sciences and Education) of practices that have led to the classification of a disproportionately large number of black and other minority pupils as educable mentally retarded (EMR). The findings and recommendations have far reaching implications for all educators committed to excellence in instruction. The study was commissioned by the Office of Civil Rights (OCR) to obtain guidance for monitoring activities.

OCR suspected that the tests used for identification were biased in some way against minority pupils. What the Academy panel found has far greater significance for education.

The Academy panel followed the trail of disproportionate placement from the tests given, back to the reasons for the initial referrals for testing, and finally back into the regular education classrooms to the nature of the instruction provided that causes so many minority pupils to be referred for special education services.

The panel concluded that regular education practices could be enhanced in quality so that a great number (if not the majority) of the future special education placements for EMR are prevented. The recommendations include an emphasis on direct instruction and behaviorally oriented teaching methods that recent research has demonstrated can be effective in preventing failure in regular education classrooms.

Some highlights from the panel's report include:

"... We have found little evidence for test bias, in the technical sense of the term, but we recognize that this null conclusion does not address many concerns about bias as the term is used in public discussions... What is needed is evidence that children with scores in the EMR range will learn more effectively in a special program or placement. As argued in more detail in Chapter 4, we doubt that such evidence exists," (p. 61).

In summarizing the research on effective teaching the panel cites several school projects, and states:

Continued on Page 26



tion of each principle. The burden of simply remembering what Engelmann and Carnine are telling us will likely discourage some potential instructional designers from basing their designs upon *Theory of Instruction* principles.

Once an instructional designer has mastered the how-to-do-it principles set out in *Theory of Instruction*, he or she is still faced with the greatest difficulties associated with applying those principles. The designer may fail to identify correctly the features shared by the instances of a given concept, or fail to recognize those features of a task that imply the most efficient initial teaching presentation, or fail to overtize sufficiently the steps in a cognitive routine. Some people will have trouble identifying the most significant minimal discriminations or even the smallest perceivable discriminations for many concepts.

These comments are not intended to discourage instructional designers from trying to apply *Theory of Instruction* principles. Rather, we are attempting to deal realistically with the complexities involved in designing instruction based upon such a rigorous instructional design theory. Since a common point of view toward instructional design is that all one needs is an understanding of subject matter and good intentions, making clear the complexities inherent in *Theory of Instruction* principles is important. Anyone who views instructional design as primarily intuitive or as "glamorous" in any sense will not find much reinforcement for those points of view in *Theory of Instruction*.

We use *Theory of Instruction* in an instructional design seminar at the University of Illinois for graduate students from a wide variety of fields. These students are learning something short of how to design full-scale instruction down to the last detail, but something of great value, nonetheless. They are learning principles of generalization, juxtaposition, and sequencing which are valuable both for improving the instruction they deliver and for evaluating instructional materials produced by others. They are learning that small details do in fact count, and thus are attending more to small details. And perhaps most importantly, they are learning to lower their expectations for any aspect of an instructional design that cannot be justified on the basis of a theory which accounts for facts about learners, communication, and knowledge systems.

In short, the benefit of *Theory of Instruction* to most instructional designers is, realistically, as a guide for moving away from "seat-of-the-pants" design toward the systematic design of truly effective and efficient instruction. Some such designers, we would hope, will expend the kind of effort necessary for eventually mastering *Theory of Instruction* principles.

#### Other Educators

Although Direct Instruction advocates and instructional designers should find *Theory of Instruction* of specialized interest, all educators should read this book. We are aware that such a claim might sound inflated, but we believe it is not. The reason is quite simple: *Theory of Instruction* is based upon a three-way analysis of human cognitive learning which explicates and integrates

the interests of all educators, regardless of their area of specialization. Those three aspects of learning are an analysis of behavior, an analysis of communications (used in teaching), and an analysis of knowledge systems. Engelmann and Carnine's analysis of behavior does not depart radically from the best work in this area, except that it treats behavior as part of a whole, rather than as the whole itself. The other two analyses, and their integration with an analysis of behavior, constitute the authors' unique contribution not only to instructional design per se, but to the nature and conditions of learning.

*Theory of Instruction* should prove to be a valuable resource for the identification of discriminable, functional instructional variables for further research because it explicates more details of instructional design than any other resource we are aware of. This value is not dependent upon the uniform "correctness" of the theory's details, but upon the fact that the details are present. Advocates of DI, opponents of DI, and those who have never heard of DI all benefit equally from *Theory of Instruction* in this respect: it explains a theory in detail sufficient for conducting (and evaluating) replicable research. And it suggests areas of inquiry heretofore unexplored.

For instance, from a DI point of view, some variables frequently identified by educators are often beside the point, such as the variability in student motivation. Since the motivation of students most certainly varies upon entering instruction, this factor must be taken as a given; and a different question should be asked: "What exact features of the instruction account for consistent effectiveness when delivered to students whose entry motivations consistently vary?"

More typically, however, is the situation in which something has been identified as a variable, or a discrete instructional component, yet the "variable" is in fact not a variable at all, but instead is a superordinate category incorporating a whole set of finer, functional variables. A study, for example, might control for the *proximity of feedback* to a response. Perhaps the control group gets immediate feedback, and the experimental group gets delayed feedback. Instruction is otherwise identical. Can such a study give us any useful information about immediate versus delayed feedback? Not without the explication of a host of more refined feedback considerations, because "feedback" is not a discrete instructional component, but a class of components.

What was the nature of the tasks for which feedback was given? Was the feedback simply knowledge of response feedback? Was feedback on errors corrective in the sense that it simply required students to produce a correct response? Did the feedback for incorrect responses vary according to variations in student errors? Did the feedback incorporate information on which students had previously demonstrated mastery? Was the feedback for correct responses designed to be simply motivating, or to further reinforce the concept being taught as well? Were response errors and discrimination errors treated appropriately? In short, were the many fine details associated with "feedback" controlled for and accounted for ade-

quately? *Theory of Instruction* provides us with guidance for identifying many variables implied by general instructional features, such as feedback. So armed, we are at least in a position to construct meaningful studies, and to evaluate the usefulness of studies by others.

Another example of a superordinate class is the set of cognitive skills referred to all too loosely as "concepts." A host of studies investigating "concept learning" exists, but few control for the variability among concepts (not to mention "learning") suggested by Engelmann and Carnine. Are the concepts being taught sensory-based? Do instances of the concept share a single feature, or more than one feature? Can the concepts be communicated only through a comparison of examples? Is the range of the concepts being taught discriminable for educated adults? What other concepts are being taught in proximity to the targeted concept? Just the fact that *Theory of Instruction* identifies such variances among concepts should compel us to account for those variances. Traditional education most frequently directs scrupulous attention to a level analogous to "types of matter," while *Theory of Instruction* directs the same kind of attention to atoms and molecules.

Put simply, *Theory of Instruction* can provide a basis for conducting research within and across subject areas that will eventually lead to empirically based, consistently efficient and effective practices. The objective educator looking for a resolution to the age old debates, such as phonics versus sight-word instruction, has the choice of: (1) conducting original research which does account for critical variables, (2) examining the relatively miniscule body of research that is subject to such an accounting, or (3) looking toward currently available research that compares programs, rather than general strategies. *Theory of Instruction* is an indispensable guide for pursuing these options.

*Theory of Instruction* can provide any educator with the ammunition not only to identify questionable research quickly, but to appreciate relatively good research as well, and to ask more refined questions about such research. A recent edition of the *Direct Instruction News* (Summer, 1982) carried a reprint of an article by Richard Hersh entitled, "What Makes Schools Effective." One attribute of effective schools identified by Hersh is high academic learning time. This conclusion of many researchers is not a great surprise to most observers, but its documentation is important and encouraging. What needs attention now, however, is the relative effectiveness of different details of high academic learning time. What accounts for performance differences between two groups receiving equally high levels of academic learning time? Since mastery is supposed to be a constant feature of academic learning time, what features of instruction contribute to the achievement of mastery in the shortest possible time?

It is possible that researchers have not often addressed questions like these because the details that need to be accounted for are not obvious or apparent. *Theory of Instruction* is the only resource we are aware of that provides details of instructional design sufficient for meaningfully addressing such questions. We might characterize the at-

tributes of effective schools as guidelines for getting into the ballpark, while the theory of Engelmann and Carnine provides guidelines on how to play the game. Anyone looking for the details of designing the most efficient academic learning time, the details of frequent and monitored homework, the details of frequently monitoring student performance, or the details of variety of teaching strategies (contingent upon student performance) is well advised to read *Theory of Instruction*.

The objective educator is not the only one likely to benefit from *Theory of Instruction*. We also recommend this book highly to those whose minds are already well set AGAINST Direct Instruction. Typically, opponents of Direct Instruction find themselves vigorously and sometimes eloquently fighting windmills. (And as a result, sometimes proponents of DI find themselves defending windmills.) That is, the arguments most frequently heard against DI either have nothing to do with DI at all, or are directed toward some tertiary or superficial aspect of DI, usually something quite specific to the delivery-mode. As an example of the former, DI is sometimes criticized as being "rote." The programs themselves provide compelling evidence against this argument, but the strongest case is made directly in *Theory of Instruction*. Nowhere have we seen a stronger commitment to teaching everything possible through generalization strategies, not to mention a better understanding of how to do so.

A common argument against a superficial aspect of DI is that the scripted teaching presentations somehow adversely affect teacher or student. This argument is typically based upon an observer's "intuition," rather than upon any form of logic or empirical evidence. There are two problems with attacks on scripted teaching presentations. First, all teaching presentations intended to be delivered by someone other than the designer of the presentation *must* be scripted in some form or another. Were that not the case, it would be absolutely impossible to do comparative studies on programs, since the degree of variance within a program would necessarily invalidate the study. The real question is not one of whether teaching presentations should be scripted, but rather of which forms of scripting result in the most uniform implementation of a program.

The more serious problem with criticism of scripting, however, is that it draws attention away from more critical features of instructional design, features that make the difference between learning and not learning, or learning efficiently and wasting time. Our message to critics of DI is simple. "Fight fairly." Take on those aspects of DI that form the foundation of all the programs, rather than the windmills of your imagination. Take on the facts about teaching generalizations, or the principles of juxtaposition. Show us logically how one can accurately induce a generalization showing only positive examples. What are the flaws in the correlated features analysis? How might large sets of coordinate members be better sequenced? Read *Theory of Instruction*, find out what DI is all about, and if you still feel like fighting it, you will at least be fighting something that exists."

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# Theory of Instruction

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For any educator, the most important and most interesting aspect of *Theory of Instruction* is the high level of detail from which the authors approach instructional design, and the scope of that detail. For the educational community at large, the nature of the details may not be as important as simply the presence of details, details upon which honest, scientifically valid educational research can be based. If the efficacy of a particular detail is in doubt, fine: the stage has been set for conducting meaningful, replicable research on that detail.

## Conclusions

We have made some rather ambitious claims for *Theory of Instruction*. After several readings of the book, and after frequently finding resolutions to what first struck us as major difficulties, and particularly after many applications of Engelmann and Carnine's principles to both instructional design and research problems, we are convinced that our claims are not, in fact, inflated. *Theory*

of *Instruction*, in our most thoughtful opinion, should become a classic in the field of education. This point of view can only be appreciated through a concerted effort to read, understand, and apply the principles of *Theory of Instruction*. Doing so is not easy. Readers we are familiar with—some quite sophisticated—have had difficulty understanding this book. Of those who have read it diligently and repeatedly, few have attempted to develop original instruction or conduct research based upon its principles. Mastering *Theory of Instruction* requires substantial effort and commitment, with no guarantees that its principles will be interpreted according to the authors' intentions. We recommend, however, that anyone interested in elevating education from the depths of mysticism make that effort.

## Reviewed by:

Robert C. Dixon  
Martin A. Siegel  
Computer-based Education Research Laboratory, University of Illinois at Urbana-Champaign

## A System for Reading Theory of Instruction

By Robert C. Dixon and  
Martin A. Siegel

*Theory of Instruction* is organized well for readers who approach the book with the commitment to read and reread it from cover to cover, particularly if those readers have an accurate idea of what Direct Instruction is all about. Many readers, however, are likely to approach this book with a limited initial commitment and with little or no previous experience with the details and scope of Direct Instruction. Typically, such readers begin *Theory of Instruction* from the beginning, read a few chapters, and give up their effort in frustration. That frustration is probably the result of struggling valiantly with the physiology of a tree, without benefit of knowing what the whole tree looks like—much less what the forest looks like.

We believe that most such frustration

can be avoided for many by reading *Theory of Instruction* in the following order:

1. Section IX: Research and Philosophical Issues (Chapters 29, 30, and 31).
2. Section I: Overview of Strategies (Chapter 1: Theoretical Foundations).
3. Introductions to Sections II-VIII.
4. Section I: Overview of Strategies (Chapters 2 and 3).
5. Chapters 4 through 28.

The emphasis in this organizational scheme is upon the forest first, then the trees, and finally the details of each tree. Its sole weakness is that readers will come across references to details which are explicated fully in sections of the book not yet read. This fact, however, should not be a problem for those who are aware of it in advance.

# Adding Quality in Education

Continued from Page 24

"A number of large scale studies... identify features of classroom organization and process that are associated with good academic performance in schools with high proportions of children receiving compensatory education (i.e., poor and minority children). These studies, all conducted in large numbers of classrooms... converge on a set of descriptors of "direct instruction" (see Rosen-shine and Berliner, 1978) that include high content overlap between learning activities and criterion (test) tasks, built-in informal assessment techniques, increased time on academic tasks, teacher pacing, and the use of motivating management systems (i.e., some form of contingent reward)," (p. 81).

"... Behaviorally oriented, direct instruction approaches have clearly emerged as the direction of effective practice in research to date, although there are reasons to remain open to changes," (p. 89).

Current special education laws and regulations (P.L. 94-142 and Sec. 504) stipulate that pupils not be placed in special education programs until it is demonstrated that "the education of the person in the regular environment with the use of supplementary aids and services cannot be achieved satisfactorily" [34 CFR 104.34(a); see also 20 USC 1412(5)(B), 34 CFR 300.550]. The panel listed four crucial points for demonstrating that such separate education is justified:

1. "there should be some evidence that schools are using curricula known to be effective for the student populations they serve."
2. "there should be evidence that the teacher has implemented the curriculum effectively for the student in question."
3. "there should be objective evidence that the child has not learned what was taught."
4. "there should be evidence that, when early problems were detected, systematic efforts were made to locate the source of the

difficulty and to take corrective measures, (pp. 69-70).

The panel's view is that a referral for special education placement should *not even be filed* until the above requirements have been met. To do so might jeopardize the child's civil rights by misdiagnosing the situation as a child rather than a school problem. Only when the school has provided instruction proven to be effective can it look to the child as a possible source of the problem. Instead of labelling children to avoid changing ineffective educational practices, ineffective practices should be improved in order to avoid labelling children.

Furthermore, the panel appears to be concluding that blaming the tests for the disproportionate numbers of minority pupils placed in special education programs is following a red herring. But the panel was not thrown off the trail. The trail leads back to the quality of education initially provided in regular education classrooms, and its failing of minority pupils.

The panel recognized that educators have not failed minority pupils intentionally. To avoid this misinterpretation of their findings, they state: "...the panel is well aware that its recommendations place a heavy burden of responsibility on the schools. This is intentional. The burden is essentially one of educating all children, and it is one that educators and schools as institutions have already accepted. Our intention has not been to add to that burden or to denigrate teachers, schools, or special education. We have argued instead that educators and educational institutions, under pressure from many outside sources, have become distracted from this central responsibility. Concerns about assessment procedures, ethnic disproportion in special education, and related issues are important, but ancillary. In the largest sense, the goal of our recommendations is to refocus the attention of educators, policy makers, and the public on the traditional goal of the schools: providing the best possible education for all children," (pp. 113-14).

And while the panel hesitates to endorse any single curriculum, or teaching method, it has reviewed the research literature on effective teaching practices and concluded that at this time the evidence clearly supports the use of behaviorally oriented "direct instruction" methods. They found little research support for any other methods, but cautioned that this might be misleading, since few other educational methods place a priority on evaluation of their results in measurable terms. The panel also found the direct instruction and behavioral methods to be effective across various school populations: regular education, learning disabled, EMR, and compensatory education pupils. Such equal effectiveness led the panel to question the necessity for even distinguishing between such pupils by labels, since the program of choice would be the same regardless of label: behaviorally oriented, "direct instruction" methods. "To understand the effects of special classes, the actual classroom operation, the nature of teacher-student interactions, the sequencing of ideas and materials, and the consequences of treatment rather than the administrative arrangement must be identified," (p. 267).

In sum, OCR has got its money's worth from the National Academy of Sciences' study. The panel was careful, thorough, and able to stick doggedly to the trail in spite of numerous red herrings thrown in the way by a previous decade of armchair speculation about why minority children wind up EMR, or learning disabled (i.e., 'have their "d's" where their "b's" belong'). Instead of a "snipe hunt," we have a realistic, thoughtful and practical set of recommendations for putting excellence back into education for all pupils. This report reads quickly and easily, and should be read by all educators really committed to quality education.

Reviewed by Galen Alessi  
Western Michigan University  
The Johns Hopkins University  
School of Medicine, and the  
John F. Kennedy Institute

## Comparison of Palo Alto & DISTAR

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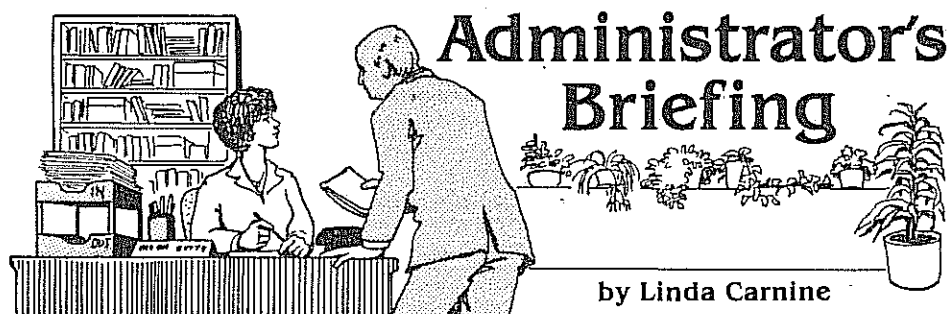
time before teaching and liberation during small group time to give greater opportunity to focus on the students' performance. There is general agreement coming from at least two studies (Cronin, 1980; Datta, 1981) that the most important long-range considerations for teachers in new implementations are: (a) higher student achievement, and (b) teachers' own improved performance.

Using rather simple guidelines, then, teachers can perform analyses similar to those done here on a variety of instructional materials. They can look first at how many skills are present in the program, how much practice the students get on the skills, and the level of detail provided to the teacher for teaching each of the exercises. This information could help determine how compensatory education students will fare with the program and how successful the teacher will be in using it.

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## Administrator's Briefing

by Linda Carnine

### Curriculum Complaints from Parents

A growing number of parents today are expressing concerns about curriculum. Often, these complaints are smokescreens for other issues they wish to raise. Nevertheless, a group of vocal, irate parents can cause much strain and tension for the administration and teachers in an otherwise positively-focused school year.

Years ago, such a group in South Dakota used as their curriculum target the DISTAR Reading I Program. They complained about the objectionable practices DISTAR was teaching their children, such as sitting on cakes, an absurdity included in the program to amuse children. Some even went so far as to suggest that the program was a Communist plot, because it contained stories about a "fat cat," supposedly representing the "fat capitalist."

Many of us working in that school system felt that the primary concern of these White parents was the entire Follow Through Program that was bringing Native American aides into the classroom and ensuring that the Native American children were learning as much as their White peers. These objections were never clearly stated; instead, the reading curriculum became the target. It caused a great deal of havoc in the district, especially for the administration and the teachers.

I have just experienced another controversy-filled year, in a different school district, and I would like to make some suggestions regarding how to handle these curricular issues to minimize stress and strain.

To begin with, establish a parent advisory group—a Lay Curriculum Committee. This group should not be completely comprised of like-minded members. Rather, it should represent a cross section of the community. A majority of the members should be reasonable and supportive of your school program, but you should also include those who might represent potentially antagonistic groups (i.e., parents who have concerns about secular humanism or philosophy, structured learning environments, ability grouping, phonics-based reading approaches, counseling activities, and/or sex education). We found that without this cross section in the Lay Curriculum membership, the decisions made regarding curricular matters were not accepted by the community at large. The committee should be appointed, or at least sanctioned, by the local Board of Education. Ideally, the Lay Curriculum group will provide a forum for good discussion.

My second recommendation is to develop specific procedures for handling complaints about books, textbooks, films or any other educational materials. These procedures should include a written report filed by the complainant(s) articulating what they find objectionable. This report can then be submitted to the Lay Curriculum Committee or its subcommittee for study. All of the members

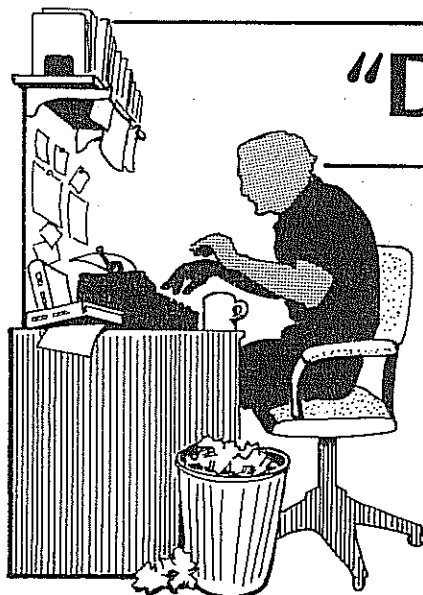
of the committee should first study the targeted materials. This should be followed by a presentation from the teacher(s) using the material, or a librarian or counselor (depending on the issue), which describes how the materials are presented and what the goals are for their use. At a later time, an observation may be scheduled of the materials in use. Before this observation, the teacher should brief the Lay Curriculum members on the objectives of the lesson to be taught and explain the purpose behind some of the instructional techniques to be used.

We had a librarian present at our Lay Curriculum group when several library books came under fire. Parents were objecting to stories about families going through divorce and other common adolescent experiences. The librarian pointed out that few students read these stories, but that they were helpful to middle school-aged youngsters experiencing the problems. The librarian's presentation was most effective, and the Curriculum Committee recommended that none of the books be removed from the shelves.

My final recommendation is to set up procedures and guidelines for the Lay Curriculum Committee to review textbook material as it is being adopted. This calls for more proactive planning, but it has a number of benefits. If your parent curriculum group has an opportunity to learn about the curriculum you are selecting and to voice concerns and preferences, they can serve as an informed resource group if objections are raised later on.

Educating the Curriculum Committee may be particularly helpful when introducing a Direct Instruction program for the first time, since these programs are characterized by some unconventional instructional techniques (e.g., choral group responses, hand signals, specific correction procedures). Parents should be informed not only about the rationale for these instructional techniques, but also about important characteristics of any good curriculum (i.e., clear explanations that give children a strategy to use when they work independently, adequate practice on new skills, and information with sufficient review for retention).

Encouraging and paying for a representative from this group to attend a teacher training session or two (such as the Annual Direct Instruction Conference) might be one means for helping the Lay Curriculum members become better informed. The representative could then share with the full curriculum group what he/she learned from the training. Parents can often communicate best with other parents about the things that are most important to them regarding school. Fostering this knowledge now may yield dividends for you the next time disgruntled parents bring a complaint about the curriculum to you or your staff.



## "Dear Ziggy"

Dear Ziggy,

In implementing DI programs (mostly for remediation purposes), I am still not sure which programs should be taught before others. For example, should the more global Corrective Reading Comprehension programs be taught before the more specific World of Facts, Curative Handwriting, or the forth-coming Expressive Writing program? While your chart in a past issue helped clarify the sequence in which these programs should be taught in a strictly remedial classroom, I have worked with students in the upper elementary and junior high grades who have a need for programs in both of these areas. Yet with time limitations, we cannot teach all of the programs that we would like. (Usually we have elected to use the more general Corrective Reading programs.) I just wondered if you had an opinion about this.

Edward Huth  
Kalamazoo, MI

Dear Ed,

The problem in working with students in remedial situations is a lot like a situation in which someone presents you with an entire beach. The sand on this beach represents the specific skill deficiencies of the learner. You are given enough time to pick up possibly three bucketfuls of sand. And of course, you are expected to select the right bucketfuls. In other words, the schedule for working with remedial students is usually impossible, in the sense that it doesn't provide enough time to address all the skills and provide an appropriate remedy. After all, students in the sixth grade are typically deficient in nearly six years of skills in three or four subject areas. So, even the best strategy must be some sort of compromise.

Here's a reasonably effective way of handling the situation:

1. Make a judgement about the teacher's ability to teach and manage. Usually a simple observation will disclose whether the teacher manages or demures, whether the teacher presents "direct orders" to the students or quietly assigns low-profile work to occupy them.

2. Don't put weaker teachers (those that demure and are into the low-profile game) into the comprehension programs. The reason is that the programs require a lot of teaching behavior and the teacher, without receiving a lot of monitoring and training, will strike out and become overwhelmed. (Decoding is O.K. because it requires less teaching behavior.)

3. With weak teachers, work on any serious student deficiency in mechanical

skills (handwriting or spelling, for instance) and *Your World of Facts*. These programs require far less teaching behavior and far less training and monitoring, yet these programs will shape the teacher's teaching behavior.

4. If the teacher is not terribly strong and the students are relatively weak in both decoding and comprehension skills, the best placement is probably *Reading Mastery 3* or possibly *Reading Mastery 4*. This placement works well with good teachers, also, and is an efficient placement because it permits students to develop both comprehension skills and decoding skills. The students should perform on at least lesson 40 of *Decoding B* (decoding within the specified error limit) for this placement. But *Reading Mastery* works well for these students because it does not require as much good teaching behavior as the comprehension programs do. One reason is that the skill development in *Reading Mastery* is somewhat slower and tends to center more around things the students understand.

5. If teachers are strong, use the comprehension programs. But even with strong teachers, monitor the teacher's progress and pay particularly close attention to whether the teacher is bringing the students to a good criterion of performance—which means that the students are doing things correctly on the first trial about 70% of the time. It's not good enough for the students to be able to perform after the teacher has corrected a particular part three or four times. The first-time-correct percentage must be relatively high or the teacher is unintentionally providing the students with a demonstration that they are failing, not succeeding.

6. If students are seriously deficient in mechanical skills, such as handwriting, always address these skills first (or possibly in connection with the implementation of another program, such as *Reading Mastery 4*). The reason is that deficiencies in these skills pre-empt students from performing in more complex skills. One reason that some students can't write answers to questions is that they write at such a low rate that they probably forget what they are trying to write (a problem that will be encountered in both *Comprehension B* and *Comprehension C*). The solution is to start with a simple dictation or copying program, the objective of which would be to bring students to a criterion of writing at least 30 words a minute. Now we can proceed with tasks that require writing skills, and we have ruled out one possible cause of "failure" that existed prominently before.

This summary certainly hasn't exhausted all the possibilities; however, I think it presented the "rules" that pertain to the most common problems associated with placing these students efficiently. Let me know how it goes.



# Engelmann Compares Traditional Basals With

By Siegfried Engelmann

*Reading Mastery 3* and 4 are designed to solve the typical problems students experience when they go through traditional basal programs. The basic goal of a reading program is to teach students how to become more proficient at decoding different types of material and how to understand this material. The approach taken by the basal programs is to identify a list of skills, such as main idea, context clues, fact versus opinion, relevant detail, etc. The basals then provide passages or intermittent exercises designed to teach these skills. The programs, however, have serious problems. (See Reading 4, 5, 6 study, DI News, Spring 1982.)

## The Problems

1. Basals typically do not have adequate provisions for teaching decoding, for testing students on their ability to decode, or for guaranteeing that students receive regular practice in applying decoding skills to a variety of materials (Beck & McCaslin, 1978, Chall, 1967). Typically, students read silently. Whether they read accurately is not determined, either by their silent reading performance or by their responses to written comprehension questions.

2. Basals do not provide adequate teaching for comprehension skills. Part of the problem relates to the categories that have been created to "measure" comprehension skills. There are hundreds of important comprehension skills in addition to those listed in the traditional-basal format. These skills are not taught, except incidentally. Also, the targeted comprehension skills are taught in a very poor manner. Typically, the teaching for a particular skill is not coordinated, which means that once a skill is taught, students do not continually use the skill. Also, the introduction is typically ambiguous (with the presentation being consistent with more than one possible interpretation). For instance, in most programs, *fact* and *opinions* are treated as opposites, which they are not. The teaching does not typically suggest that somebody could have an opinion that was a fact, or that it is fact that the person had a particular opinion. Finally, the programs are built around a "spiral curriculum" format, in which different lessons deal with different topics. Typically, however, about 60 school days elapse between the presentation of two or more examples on a particular topic (such as *fact* versus *opinion*).

3. The skills are not integrated. The lack of integration occurs on the level of daily lessons and is observed in the frequent discrepancies between the workbook items for the lesson and what the students are "taught." As a rule, students are not tested on what they are taught during a particular lesson. On the level of lesson-to-lesson integration, the programs seem to operate from the assumption that continuity is not necessary. Typically, the student readers are anthologies, with relatively uncontrolled vocabulary, uncontrolled sentence forms, and no careful gradation from one author or selection to the next. (Vocabulary and sentence forms are not

systematically introduced, practiced, and then integrated.) The programs have no review tracks or activities that systematically review things that had been taught (word meanings, information, decoding words, skills—such as drawing inferences or using "context clues"). And the programs have no performance criteria or solid expectations for either the students or the teacher. (Lessons or expected units of progress are not specified.)

4. Perhaps the most distressing aspect of these programs is that most stories—the heart of the program—are not very interesting or highly motivating. (Generally, the good basal stories introduce far more vocabulary and are therefore much more difficult to decode than the poor stories, which often require many inferences, because impor-



SIEGFRIED ENGELMANN

tant information is missing and must therefore be supplied by the reader.)

Students would generally be much better off reading good novels than they would engaging in traditional basals. If they read a single author, they would receive enough repetition of particular sentence forms and particular vocabulary to learn something. They would also read interesting stories. Students are deprived of these opportunities by the basals because of their author's lack of concern with details. Another problem is that there are almost no good novels available for students performing on the third-grade level and very few for students on the fourth-grade level. (Most of the novels judged appropriate for fourth graders by Scholastic Book Club and other book clubs are not actually appropriate for fourth grades. They are possibly suited for the average mid-fifth grader. We determined this fact by comparing performance on achievement test items with the novels.)

Because the basal stories are not greatly interesting and because there is no continuous new content control from story to story, the basals tend to reinforce terrible strategies for all but the highest performers. The learner is taught to approach reading material with the attitude, "I probably won't understand much of this stuff, but it doesn't matter, so I'll just skip over the parts that don't make much sense."

## The Solutions

The problems imply the solutions. If the program is to overcome the problem of inadequate decoding, it should provide adequate decoding practice. The program should also provide adequate teaching for comprehension skills, should teach all new words, syntactical constructions, and facts that are needed if students are to understand the stories. The program should provide for the systematic integration of skill into the stories. Finally, the program should revolve around stories that are interesting. The stories, obviously, should not be part of an anthology, because too many details must be controlled—the types of inferences or comprehension questions supported by the text, the specific vocabulary words, the syntax, the integration of facts and information, and interest level of the stories.

From a mechanical standpoint, the objectives of *Reading Mastery 3* and 4 are obvious from the major activities in the daily lessons. Students begin by orally reading isolated words. These words are pretaught before they are presented in stories. (Vocabulary words appear on 1-4 lessons before being introduced into stories.) For some words, the teacher provides information about word meaning and tests students on word meaning. These words are those that may be unfamiliar to the students (and also words that will appear in stories that follow the preteaching.)

Next, the students read selections. On all regular lessons, students read a main selection, which is usually a chapter of a longer serial. The chapters are designed to end on a cliff-hanging note (to promote interest). Students read part or all of the selection orally. They have an "error limit" for the oral story reading. If they read within the error limit, all students receive points. Also, during the reading of the selection, the teacher asks specified comprehension questions. These questions are keyed by circled letters in the student reader. When a student reads to the end of the sentence that is followed by a circled letter, the teacher asks the question for that letter. During the oral reading of the main selection, the teacher asks between 15 and 30 questions.

On some lessons, students read information passages before reading the main story. These passages present facts and rules that relate to stories they will read. For instance, if students are going to read a selection about a flea circus, the information passage presents information about the fleas and how they are trained.

Following the structured work, students do their independent work. They are presented with around 40 items each day. The items deal with the information that had been taught—vocabulary words, facts and rules from the information passage, questions that relate to the main story. The students' independent work also includes a review section that tests important information skills (such as map skills) taught earlier in the program.

Although an examination of the daily lessons discloses the major objectives, it does not suggest the degree of control and integration that occurs within the

program. Because such control is not exercised in other reading programs, I would like to illustrate some of the things that may escape the casual observer.

## Easy Reading Material

As I indicated above, our greatest concern is setting up the main reading selections of the program so they teach new things, (new perspectives and new information) and so they are interesting. I mentioned that traditional stories of high interest usually have elaborate vocabularies (because the author is explaining things that are happening in a way that permits the student to identify with the events), while the stories with simple prose usually require incredible inferences on the part of the reader. The reason is that the author has left out important details in an attempt to make the prose "simple." Below is a passage from a biography of Jane Addams written by Hellen Peterson. It illustrates the amount of inference that is implied if the text appears to be "simple."

One day in Spain, Jane knew what she would do. She told Ellen. "I will rent a house in the poorest part of Chicago. I will live with the poor people and be their neighbor."

"But what will you do there?" Ellen asked.

"Whatever I can to help them. Oh Ellen, let's do this together. Will you?"

"I - I . . . ." Ellen stammered. Then suddenly she was smiling. "Yes! I believe all men are brothers. I'd like to live those words."

Jane was overjoyed. A short time later she was back in London. Some college men were living together in the East End now and helping the poor people. The name of their home was Toynbee Hall. She saw classes where college men taught working men and women. She heard a young man from Oxford University tell stories to a roomful of eager children.

Jane had an idea. "Young women can come to work with us!" she thought. "College women like myself who haven't known what to do will be happy to help."

She hurried home to start her settlement house.

That prose is not the type that grabs kids (or many other people). It is unintentionally very difficult for a number of reasons. It introduces names that should be explained, such as Oxford University, but mentions them only once, (which means they are irrelevant). The strategy that some students will develop is to simply read over any strange names with the understanding that they are probably incidental and probably play no real role in the story. The problem with this strategy is that it will not work on some occasions. The "strange name" that is introduced may both recur and may have an important bearing on the story. So the students are punished either way—punished if they are forced to read incidental words and references, or punished if they do not and later fail to comprehend what is happening in the story.

But the Jane Addams excerpt has many other problems. It flits from set-



# SRA's New Reading Mastery 3 & 4

ting to setting with nothing to hold the sentences together. Although the sentences and the declarations about the different events are not generally hard to read, they create bizarre characters who have apparently random and unmotivated thoughts. Can we really picture a person who had the thought about college women helping in this home and then who hurries across the ocean on her way home so she can start a settlement house? This distillation of events is very artificial and hard to identify with. (She would probably do what everybody, including fourth graders, would do, which is to chew on the plan, develop it, anticipate the problems, talk, rehearse, plan, plan, plan.) Very sophisticated readers may be able to interpolate the necessary information between the lines of the truncated account above. But the formula for making descriptions easier is to provide more details about the significance of events. The more thorough the information, the less likely it is that students will fail to extract the meaning and emotions the character experiences.

Below is an excerpt from one of the early *Reading 4* stories. The characters are Oomoo and Oolak, Eskimo siblings, and a full grown polar bear named Usk, which the children had raised from a cub and which they were no longer supposed to play with. Despite their father's other warning about not playing on the ice floes, the youngsters went on the ice floe and began to play on an ice chunk, which drifted north, toward the open water, where a band of killer whales waited for any unhappy prey that tried to venture toward the open sea. The excerpt starts as the youngsters are drifting toward the killer whales.

Oolak looked very frightened and cold. His eyes were wide. Oomoo tried to hold on to him and keep him from slipping off. "Are we going to die?" he asked.

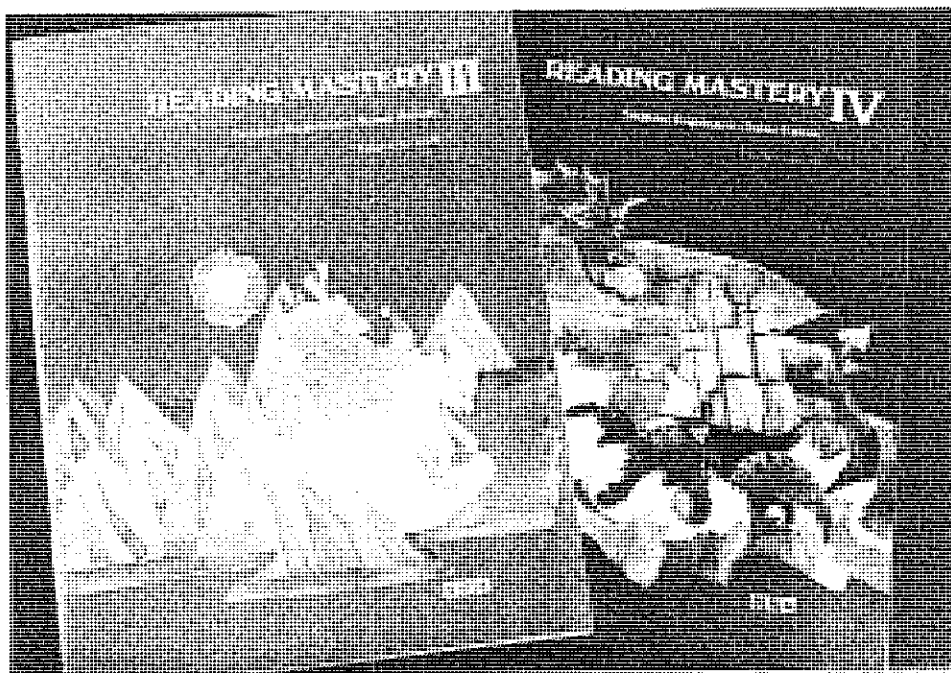
"No, we're okay," Oomoo said. She was lying. She didn't see any way that she and Oolak could survive.

Then suddenly the wind died. The waves still rolled and continued to push the ice chunk beyond the ice floe. But the big wind had stopped. Rain and hail started to fall. The rain and hail made more noise than the wind had made. "Help!" Oomoo shouted. But she was starting to lose her voice. "Let's shout together," she said to Oolak. "One, two, three: help!" They repeated the shout again and again, until they could not yell anymore. Still the rain and the hail pounded down. Even though the rain was cold, it was much warmer than the ocean water.

After half an hour, the rain began to die down. When the rain had been coming down very hard, Oomoo had not been able to see more than a few meters. Now she could see where they were. The ice chunk was near the top of the C-shaped ice floe and it was still moving north. Oomoo looked to the ocean, past the ice floe, and she could see them—five or six of them. Sometimes they would roll out of the water so that she could see the black-and-white markings around their heads. Sometimes they would move

along with only their fins above the water. Oomoo saw the killer whales, but she didn't say anything to Oolak. (*Reading Mastery IV*, page 67.)

This passage is less difficult for students than the Jane Addams excerpt because it gives information about why the characters do what they do, and how they feel. Fourth graders have no trouble identifying with characters if they have enough information about how the characters feel and why. Because the passage provides that information, it does not require incredible inferences to transform the characters into people they could identify with.



## Controlled Vocabulary

A common feature of beginning reading series is a controlled vocabulary—an introduction of a limited set of words that are to be used in all stories. Typically, the controlled vocabulary applies only to the words to be decoded, not with word meaning (although the teacher may "discuss" the meaning of the words). The controlled vocabulary usually vanishes in the third and fourth levels of these programs because the reading material is an anthology.

*Reading Mastery 3* and *4* have a very careful vocabulary control. All words that are new for decoding are pre-taught (during the first part of the lesson). A given decoding word appears in more than one lesson. In addition, specified vocabulary exercises are presented for all words whose meanings may not be understood by the students. Word-meaning exercises are presented on more than one lesson, and these meanings are reviewed throughout the program. With minor exceptions, if a word is introduced, it will appear at least 15 times in the reading material presented to the students. The cumulative review and application of new words guarantees that students learn these words and become facile in using them.

## Oral Reading

A good program should provide students with models of good oral reading and lots of practice in oral reading. The oral reading is functional when reading to a group, when reading poetry, when reading plays or other speeches. Oral reading is also important because it is closely related to com-

prehension. Comprehension assumes that the reader first reads the words that the author presents, then understands them. If the reader does not accurately read the author's message, the reader is preempted from understanding, in many situations.

*Reading Mastery 3* and *4* meet the oral reading objectives. The program contains daily provisions for the teacher to re-read the first part of the daily reading selection, providing students with a good model of oral reading (with inflection and appropriate feeling). Also, as noted earlier, the students read either all or most of the selection aloud (all of the

answers to comprehension items is an important objective for any reading program. For this objective to be met, the program should be designed so that students retain important information and demonstrate their retention through written items. The written items should make sure that students understand everything that has been taught, and the items should be designed so that students receive continual review and application of important facts, relationships, and rules.

In *Reading Mastery 3* and *4*, many oral question also appear as worksheet items, and the more important questions become part of a cumulative review that continues throughout the program. The recurrence of these questions helps shape student strategies for retaining information. Basically, the rules for designing written comprehension questions are:

1. Items sample the important information presented in the stories.
2. They test facts that were provided in structured teaching demonstrations, such as the information passages (which present the facts in a way that permits them to be firmed by the teacher).
3. They require students to apply rules, strategies, and skills that had been taught (such as map skills or rules about ocean currents).

The questions are not "picky," which means that they usually do not require students to go back to the story and find specific words that answer questions. The main goal is to teach students to retain the information. ("Study skill" items are different, however, because they require students to find specific information. The program presents study skill exercises that require students to refer to story information that students probably would not remember.)

## Controlled Syntax

Students often do not know what different types of sentences are attempting to say. The students' problems are reasonable, because many sentence forms that appear in stories are not widely used in conversations. The use of qualifiers (such as generally), appositions, passive voice, gerunds, and other forms that are infrequent in conversations should be taught in the same way that any skill is taught. All examples of a particular sentence form are the same with respect to how they are interpreted. So the strategy for introducing each form should be to give students repeated practice in "translating" sentences of that form. The process should be cumulative, so that once a form is introduced, it continues to appear in the material the students read.

Basals, and other texts, do not generally follow this procedure. Instead, relatively short passages may contain a variety of sentence forms that may be ambiguous to students simply because the students have not had much experience with them. The sample below comes from a fourth-grade science text. The problem parts are italicized.

...Listening and watching in the stern as the clanking, churning paddle wheel sprays you with water can be exciting, too.

Continued on Page 30

The early river boats depended upon steam for power. Wood or coal was burned to heat water in the boilers. The water changed to steam. Steam, under pressure, caused parts within the steam engine to move. The movement of these parts, in turn, caused other parts to move. One very big part which moved was the large paddle wheel. . .

The syntactical problems interact with the vocabulary problems and render the passage very difficult for the average or below-average student. (Questionable words include *stern*, *depend upon*, *coal*, *boilers*, *in turn*, and *caused*.) Aside from the vocabulary problems, the passage introduces gerunds (listening and watching—without an actor to perform these actions), passive voice, and/or construction, needless qualifiers, and questionable use of *which*.

To solve the syntax problem, *Reading Mastery 3* and *4* present a controlled syntax (to go along with the controlled vocabulary and controlled information). At the beginning of level 3, sentences are designed so that the first part designates something that is happening and each subsequent part unambiguously adds more information. No "loops" or ambiguity are possible with these sentences, which means that the sentences do not become barriers for student understanding. Sentences like these would never appear early in the program because they break the rules:

"When he went home, Jokey ate four cans of dog food."

"Jokey, when he finally got home, ate a huge meal."

The first sentence is a "no-no" because it does not name the actor in the first part of the sentence. (It should say: "When Jokey got home, he . . ." because this order presents the information unambiguously.) The second sentence contains a kind of apposition and creates an unusual word order, which makes the sentence potentially difficult.

The only violation to the progressive-meaning structure of sentences occurs with speeches that characters make. In these sentences, the name of the speaker comes after the quote. However, these are set up so that: (a) the sentence preceding the quote makes it clear who is talking; or (b) the content of what is said makes it apparent who is talking. Below is an excerpt from a series about Jokey, a beagle who is very fat because he eats everything.

There was a cat peeking through the fence on the other side of the yard. "That's right," the cat yelled. "Everybody thinks I'm so ugly, but I'm beautiful next to you."

Jokey tried to pull in his big belly so that he wouldn't look so fat. It didn't work. His belly was still touching the ground. "I can't help if I'm fat," Jokey said. "It's not my fault."

"Wrong," the cat said. "It is your fault. Don't you know the rule: The more you eat, the fatter you get. If you don't eat as much, you won't be so fat."

It is possible to identify who is talking by referring to content of what the character says or by clues that are provided through the preceding paragraph.

As students progress through the program, new syntactical forms are systematically introduced. For instance, passive voice constructions are introduced in level 3. The introduction involves the easiest type of passive-voice construction, which is a verb at the end of the sentence. This form is easiest because the verb functions in the same way an adjective functions.

"She was finished" is structurally and semantically similar to "She was carried."

When each type of syntactical form is introduced, students receive "massed practice" in dealing with the new form. Below is an excerpt from a story about the word bank, an imaginary place in the land of Hohobo in which words are seated according to the frequency that the people in Hohobo use the words. The most frequently said words are in the front row and the least frequently said are in the last row. When the people in Hohobo started to do things (which was new behavior for these people), great turmoil occurred in the word bank. The excerpt below takes place on the day that new seats are announced for the words.

At 9:00 announcements began and they were not finished until late at night. Nearly every word in the word bank was moved. Sometimes whole rows of words were moved. And some words moved more than 100 rows. The most amazing announcement of the day came about 10:30 in the morning, after two or three hundred words had been moved. Here was that announcement: "The words run and walk will move from row 110 to row 1." (Reading Mastery IIIA, page 280.)

Note that the passage provides repeated practice with the new form. The sentences tell about *was moved*, *were moved*, and *had been moved*. The passage begins with a sentence that uses *were not finished*, which is a particularly easy transition sentence. Note that the introduction of the passage firms some earlier-taught vocabulary words (such as *announcement*). The passage deals with time notations. The passage supports inferential comprehension questions based on the word-frequency rules that govern the seating in the word bank. And the passage presents a sentence that describes what *had happened*, a sentence form that had been introduced earlier. Although the intertwined objectives may be perfectly invisible to the casual observer, they are disclosed by careful analysis of the text. Everything that had been taught is reinforced in the text material, and the text material provides sufficient practice with the various teaching objectives to

assure that students become firm in applying all the targeted skills.

## Comprehension Skills Revisited

When we look at the problem of comprehension as it relates to the word-by-word, sentence-by-sentence progression through a passage, we realize how fragile the traditional comprehension-skill categories are and even worse, how inadequate they are.

There are only three major "categories" of comprehension skills: (1) the structural details that are unique to the written page (and that have no counterpart in spoken language), (2) information that is treated literally, and (3) information that promotes some sort of inference.

### Structural Details

Included in this category are: dots or spaces between paragraphs that indicate some "time lapse" or lack of transition, italicized or bold-faced words that are to be stressed or said loudly, ellipses following partial utterances ( . . . ) to indicate that the person stopped talking or was interrupted.

Each of these details is taught in *Reading Mastery 3* and *4*. For instance, students learn the rule that dots at the end of a paragraph indicate that part of the story is missing. Students then read to the dots, interpret them, read the following part of the story and then draw a conclusion about which part of the story was missing. If one scene is in a school, and the next is in the character's home, students conclude that the missing part would tell about the character going home.

Similarly, students learn to interpret bold-faced words by stressing them. If a character says, "I don't want to do that," students say the speech the way the character said it, stressing the word *that*. Again, students receive repeated practice in "interpreting" bold-faced words.

### Literal Comprehension and Inferential Comprehension

The test for literal comprehension is simply: Do words in the story answer the question that is asked? If so, the item tests literal comprehension. Literal comprehension practice is important because it tests the stated aspects of the passage. Students therefore receive repeated practice in literal comprehension.

In levels 3 and 4, however, students also learn and apply various inferential comprehension skills. There are two basic types of inference—those that are based on a deduction and those that are based on induction. For deduction, the rule is specified and is then applied to instances. (The cat who talked to Jokey presented such a rule: The more you eat, the fatter you get. This rule supports the

rest of the deduction: You ate more, so you got fat.) Inductive inference does not present a rule. It simply presents examples that permit future predictions. For instance, let's say that a character in a story lies again and again. These instances suggest the rule: He is a liar. When a new situation occurs, we can predict how the character will behave. He will probably lie.

The traditional comprehension categories of cause and effect, relevant detail, context clues, etc., make very little sense within this framework. In the example about the liar, for instance, how could we draw a conclusion about future behavior without attending to context clues? How could we attend to context clues without perceiving relevant detail? When the character appears in a new situation, how can we predict the behavior unless we know what causes it? Furthermore, how could we even follow the story unless we attended to literal information presented in the story? Certainly, *Reading Mastery 3* and *4* teach cause and effect, relevant detail, context clues, and all the other traditional skills, but they teach these skills within a more comprehensive framework that treats various inferences as either deductions or inductions (not always by labelling them, but by referring to the information presented in the story). At the beginning of level 3, students receive repeated practice in performing deductions. Figure 1 shows an example from worksheet 13.

Deductions are applied to a variety of content, throughout levels 3 and 4, including content in which the "rule" that determines the conclusion of a deduction is embedded in a story. For instance, the passage below is the opening paragraph from a level 4 serial.

Going places with Grandmother Esther was fun, but it was also embarrassing. It was embarrassing because Grandmother Esther had a lot to say, and she talked in a very loud voice. She talked the loudest and the longest about inventing. So when Leonard went to the museum with Grandmother Esther, Leonard was ready to hear a lot of talk about inventing. (*Reading Mastery IV*, page 121.)

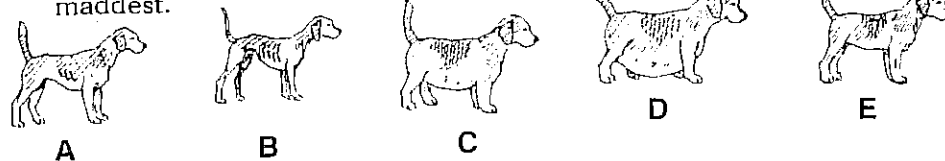
Questions such as "How loudly will she talk at the museum?" and "Why?" are derived through a deduction (and are asked by the teacher).

The deductions sometimes apply to a variety of complex behavior. In the serial about Leonard, for instance, Leonard invents an electric-eye device that automatically turns off lights in a room that is empty and turns on the lights when somebody enters the room. During the first afternoon of the invention fair, Leonard is disappointed by the lack of response to his invention.

Grandmother Esther explained:

"Things aren't always what they seem to be. Smart manufacturers will never let you know that they're interested in your invention. They're smart. They know that you'll want more money for your invention if they're very interested. So they'll act as if they're not interested. Don't let

6. The people who owned Jokey got madder and madder as Jokey got fatter and fatter. Circle the Jokey that made the owners the maddest.



7. What do you do when you go on a diet? \_\_\_\_\_

FIGURE 1

Continued on Page 31

them fool you. The ones that seem the most interested are the ones who will never want to buy your invention." (*Reading Mastery IV*, page 158.)

The next chapter of the serial tells about the last day of the fair. The excerpt below presents one of the many complex interactions that are based on the "rule" Grandmother Esther had presented. The excerpt begins when manufacturer's representatives casually approach Leonard's booth.

Grandmother Esther whispered, "Leonard, they're going to try to make a deal with us. Let me do all the talking."

The man and woman approached Leonard's display. They stopped. They didn't smile. They just stood there.

"Hello," Leonard said at last.

The woman said, "Do you have a patent on this device?"

"Yes," Leonard replied.

The woman said nothing for a few moments. Then she said, "I'm with ABC Home products." The woman continued, "I don't think many people would be interested in an invention like yours. But I may be able to talk my boss into working out a deal. But that deal must not involve a lot of money."

Grandmother Esther pointed to the large clock in the center of the hall. "It's already after eleven o'clock," she announced loudly. "This afternoon we're going to be very busy. This evening we're going to win first prize and there will be many manufacturers who are interested in this invention. If you want to make a deal, you'd better start talking about a lot of money, and you'd better start right now." (*Reading Mastery IV*, page 159.)

The discrepancy between the woman's speech and her motives are explicable in terms of the rule that Grandmother Esther had presented earlier. Although "inferences" of this type are common and important, how do we categorize them in terms of traditional basal classifications? I don't know of any category that deals with overt behavior versus real motives.

## Inductions

Just as there are thousands of possible deductions that deal with anything that can be expressed as a "rule" (from the rule about how words are seated in the word bank to rules about the discrepancy between what manufacturers say to inventors and what they really think), there are thousands of possible inductions. Various types are presented in level 3 and 4. They range from simple examples to those that are very complex. One of the more complex inductions occurs in the Leonard stories. After the students read about how Leonard solves different problems in designing a workable electric-eye device, the serial ends with Leonard being a successful inventor (after winning second prize and making a deal with ABC Home products). In the last chapter of the serial, Leonard and his mother go to the store. As they approach the car, carrying bags of groceries, his mother complains

because she must put down the bags and search for her key to the trunk. Leonard examines the car. The trunk of the car is dusty.

He drew two little circles in the dust. One circle was on each side. Then he looked at his mother, smiled, and said, "I have figured out an invention that will solve your problem."

Now it is your turn to think like an inventor. See if you can figure out the device that Leonard was thinking about when he told his mother that he could solve her problem with an invention. The end. (*Reading Mastery IV*, page 167.)

To solve the problem, the students must apply what they have learned about the electric-eye devices and figure out how to make the trunk open in a way that would occur only when somebody was standing very close to the trunk. This task is inductive. (By the way, during field tryout of the program, most students came up with very clever inventions.)

## Perspectives

Cutting across both inductions and deductions are perspectives. There are perspectives based on importance (with a person responding one way to things that are important to the person and another way to things that are not important), perspectives of size or distance (with some things looking big when viewed from one perspective and small when viewed from another), perspectives of time (with a given time period apparently short to one person and long to another), and perspective of viewpoint (with the reader receiving information about what one character is thinking, but not what others are thinking). Each perspective is taught in levels 3 and 4. In level 3, students learn about size and distance perspectives through a serial about Nancy, a spoiled little girl who shrinks to the size of a drop of water. She learns many things about being small, such as the rule that very small animals are not hurt if they fall from high places, and that their voices become higher as they become smaller. She has adventures trying to drink from a drop of water (which has a skin around it that presents problems when she tries to penetrate the drop). The students practice switching viewpoints by indicating how large things look to us and how large they look to Nancy. (For instance, students indicate how small a crumb of toast looks to us and how large it would be for Nancy if she held it.)

Other viewpoints are presented in the level 3 serial of Herman the Fly. Herman wanders into a jet plane that travels all around the world, stopping at different places. Herman has different adventures. Things that are seen through his viewpoint are juxtaposed with the same events seen through the eyes of the passengers on the plane. The excerpt below illustrates one of the many perspective switches. Herman is caught in a spider web as the plane approaches Japan.

Herman gave a great buzz with his wings. He gave the hardest buzz he could make. Suddenly, he was in the air, with some sticky stuff still on his legs.

Get out of the dark, Herman thought. He flew from the closet to the bright parts of the jet. A moment later, Herman landed on a warm red and rubbed his front legs together. As Herman sat on the seat back, he did not remember what had just happened. For Herman, things were warm and red. And he was tired. Time to nap.

For the passengers it was a time for excitement. Look off in the distance. The green strips of land and a great mountain. "Look," they said as they crowded near the windows. "Japan." (End of chapter, *Reading Mastery III*, page 243.)

The culmination of all the perspectives and all the information presented in levels 3 and 4 is the last serial in level 4, a 38-chapter story about Al, who was a very poor student, and his sister Angela. They encounter a strange old man who operates a shop on a strange street in the city. The old man has magical powers and takes the youngsters on trips to exotic places, but the trips are contingent upon Al and Angela being able to pass a test on the information learned from each trip. Through different adventures, all perspectives are reviewed and integrated into the new story context. On Al's first adventure, he finds himself in a racing car, zooming along at a speed of more than 180 miles an hour with the engine screaming and wind roaring. Suddenly a jet speeds past the racing car.

The old man said, "This car is really very slow. Let's get into something that has some more speed."

"I think I better go home," Al yelled. "It's getting late and..."

Suddenly, Al was no longer in the racing car. He was in the front seat of a jet plane. Everything was quiet inside the plane. Al looked out the window. He could see the racing car below.

When Al looked at the speedometer, he couldn't believe it. One thousand kilometers per hour. (*Reading Mastery IV*, page 321.)

At the end of the chapter, Al and the old man were hurtling through space at the speed of light. The old man pointed to a far off galaxy and said that at the speed they were traveling, it would take 200 million years to reach that galaxy. The test that Al received following this trip consisted of one question. What does it mean to go fast? Al explained that in the racing car, he felt that he was moving at a frightening speed, but the speed of light is actually very slow when you consider how long it would take to get to places that are far off in the universe.

In later adventures, Al becomes so small that he can observe molecules; he goes to Neptune and Saturn (where air is a solid); he and Angela go to the bottom of the ocean where they observe how pressure affects a small balloon as it ascends, and observe the strange creatures that are adapted to the ocean floor; they go to the Sun, and the Milky Way, where they see our sun from a new perspective—as a medium-sized star near the edge of the disk. They go inside the human body and observe the workings of bones, muscles, the brain, the

eye, the ear; they go to the poles or the earth. After Al and Angela pass the test on this trip, the old man explains why there will be only one more trip.

"You don't need the trips anymore. When you first came to me, you needed to see things. You needed to learn about the world. And you needed to learn that it is fun to learn. Now you have learned these things, so you no longer need the trips." The old man selected the last trip, the library. After reading parts of books about modern animals and dinosaurs, the old man asked, "Did you like this trip as much as the trip to the poles or the human body?"

"No, I didn't," Angela said.

The old man smiled. Then he said, "Taking a trip from a book is not as easy as taking a real trip. You have to use your imagination to take a trip from a book. The old man then reminded the youngsters that they could no longer go on real trips. "But you can still go back to the bottom of the sea with a book. And if you want to visit other planets, take a trip from a book."

The old man stopped talking. The library was quiet. Al was thinking, "Maybe the trip from a book would not be as good as a real trip, but it would still be a good trip. It would be fun to take a trip to Africa and learn about the baboons. It would be fun to go back to the Mesozoic and read about Plateosaurus." (*Reading Mastery IV*, page 430.)

As Al learned, books represent the ultimate culmination of different perspectives. *Reading Mastery 3 and 4* are designed to present this ultimate perspective to students in a way that is both plausible and emotionally compelling. By the time students complete *Reading Mastery 4*, they, like Al and Angela, will have experienced many things through books—vivid experiences that make them laugh (such as the foibles of Jokey), and make them cry (such as the death of Herman), that transform ordinary things into centers of excitement (such as a drop of water), and that transform vocabulary and information into tools that permit the student to gain a great sense of achievement and to open new doors to exciting places and events.

The programs have the potential to achieve these goals—which should be the goals of all reading programs. The intertwined objectives assure that students will not become overwhelmed or bored, if the program is presented properly, and the format guarantees that students use the information and vocabulary they learn and that they use it in a broad range of contexts so there is an ongoing payoff to the students for learning the words, inferences, and knowledge of structure that serve as the basis for not merely "learning to read," but "reading to learn."

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# DI Follow Through In Providence - The History

by Gary Davis

*Editor's Introduction. Follow Through was a federal project designed to test different approaches to teaching disadvantaged children in kindergarten through third grade. The Direct Instruction Model started working with 12 school districts in 1968, added 6 more in 1969, and 2 more in 1970. People like Gary and Karen Davis were trained by Engelmann and Becker to be project managers and field supervisors. In the final analysis of the Follow Through data by Abt Associates, The Direct Instruction Model produced the most positive results in terms of learning gains. It showed that compensatory education could work with proper programs, training, and use of time. Providence was not a total failure. The children did make considerable progress. But we did fail to have a long-term impact on Providence's approach to educating disadvantaged children. This story views the failure from the heart of one who gave eight years of his life to Providence. Names have been changed to protect the "innocent."*

Roger Williams founded Rhode Island and the Providence Plantations in 1663. If only it had remained lost.

## 1969-1970

I made only one consulting trip to Providence during this school year, therefore, most of my information is second hand and not as complete as it could be. Follow Through was operating at three schools: Jenkins, Berkshire, and Fogarty. Fogarty had the only assigned full-time principal. Berkshire and Jenkins Schools had part-time principals. Their chief responsibility was a larger school to which they were assigned. Berkshire and Jenkins Street Schools suffered from neglect and both had serious organizational problems.

The classroom setup was also strange. One additional teacher for every two rooms was hired instead of aides. The *swing teachers*, so termed because they "swung" between two rooms, had the responsibility to teach six to eight groups daily in several rooms. Groups were 20 minutes long (lessons normally require 30 minutes). I made a consulting visit in March, 1970. Implementation of the swing-teacher concept resembled a circus clown act at Berkshire Street School. At an exact time teachers would stop teaching, grab their books and rush off to another room to be in time to do another 20-minute group. As supervisor, I ended up running along side trying to give them feedback concerning the lesson they had just taught. After the first day, I wore sneakers. Swing teachers did not allow for sufficient follow up. Teachers that checked the work were often not the ones that did the teaching. The reading program was implemented the best because it was taught by the homeroom teachers who were able to give additional practice in this area.

Fogarty School children were performing in the program at much higher levels than children at Berkshire Street. Two factors accounted for the differences.

1. The DI consultant, Liz Mageral, spent a great deal of time working at Fogarty.
2. Fogarty had a full-time principal that ran an organized school.

## 1970-1971

Out of the West rode the two masked avengers, Gary and Karen Davis, to assist the teachers and aides in Providence. A more apt description would

were placed in our two-week pre-service to give them jobs until school opened and they could be placed in other programs. School opened with empty positions and last minute substitutes. I would like to say that the difficulties were cleared up as the year progressed, but I can't. Eighty different aides were hired. We trained 32 different aides *after the start of school*. The turnover was concentrated in approximately a half dozen rooms. Often when aides quit,



GARY AND KAREN DAVIS

be a couple of young kids being thrown in to the lions' den. Luckily, the lion was already bloated and couldn't get up for the kill. He just kind of gnawed on us a piece at a time. We settled into a typical New England apartment with ten-foot ceilings, two fireplaces that smoked if we burned a fire, and neighbors that screamed and hit their kids.

Budget considerations and pressure from Washington brought the "swingers" to a deserving end. Paraprofessionals were hired, 48 in all. This was up 32 from the previous year. However, the person doing the hiring had not the remotest concept of what we expected aides in the program to do, therefore, several people at the pre-service training sessions were completely inadequate. Some were functionally illiterate, others *were illiterate*. Several

several weeks elapsed before a replacement was found.

A major reason for the turnover was the demands placed upon the aides versus the wages. Starting wage was \$1.80 per hour. Many attempts were made by Oregon to change this. Two separate agreements were made with Dr. Jones, Federal Programs Director. Both were negated by the Superintendent, Dr. Smith. Since we could not end the aide shuffle through increased wages, we settled for more efficient procedures in hiring and firing. The Follow Through Project Director took steps to ensure that he interviewed all applicants, himself, for school year 1971-1972. An agreement was worked out to hire all new aides on a six-week probationary status. At the end of six weeks a report on their training and classroom work would be made

to the Director and Personnel Committee. Action would then be taken by them to either terminate or place the person on permanent status.

The Fogarty Principal filed a grievance against the aides teaching. I considered this undue harassment. I came on very strong with him. I let him know that we did not appreciate his action and we were going to set him straight. I requested test data from the children in his school be sent to Engelmann at the University of Oregon. What I accomplished was to alienate an already alienated man even further. I ensured that the Follow Through classrooms at Fogarty would be isolated even further than they were. I learned a valuable lesson. If you don't have any string to pull, punt on first down. He did not send the data. We were not able to get it through the School Department. It took three years to repair the damage. The state board ruled that the aides were *not teaching*. They also ruled that teachers needed to do the initial presentation of new concepts and that the AIDES COULD ONLY REINFORCE these. By now we had learned the game. We ignored the state ruling. No administrator in Rhode Island was ever going to go into a classroom and see what was happening. The ruling was quickly and quietly forgotten by all.

## Administration

The project was disorganized. The original Project Director retired in January, 1971. She was replaced by a person we will call Mike in the middle of April. This was not the best situation, faced with the dual realities of absentee principals and the aide shuffle. The principal situation had not changed; only worsened. The addition of a fourth school gave us an additional absentee principal.

Somehow teaching went on and children progressed. The situation was better than the previous year, which is not saying much. The staff was in the ball park, only many weren't sure if they were playing basketball, football, or baseball.

Our problems were similar to the last year. Buses came late and left early. Organization of three schools was a horror story. Administrative support for the program was nil. These same things reoccurred year after year after year. The structure was unable to solve problems; it could only meet crises as they arose. We expended enormous amounts of energy fighting these battles. Providence's last concern seemed to be the classroom. What did it matter if children lost a half-hour in an already short day because of bus schedules? What difference did it make that teachers came and left with the children? What did it matter that staff was not replaced quickly? Given these and similar conditions, I am surprised we functioned as well as we did.

## Supervision

Karen and I split the four schools. Karen worked at Fogarty and Berkshire. I took Jenkins Street and Lady of Lourdes.

Lady of Lourdes School started without any furniture for the children. Lady of Lourdes was set up as a second grade center for all Follow Through. (I



# Of a Failure

thought we were running an annex to the Providence zoo.) Child behavior was horrible. These were children who had started in the first grade instead of kindergarten. The teaching staff included two ex-swing teachers who were disasters. There were several first-year teachers who eventually became good, but being new, had no influence on the school. Another first-year teacher was so bad that downtown actually indicated to her that they would not rehire her—a *first* for the city of Providence...also an *only*. They took this action after being verbally coerced by me with backup letters from consultants who had been in the room.

Jenkins School was fair and made great improvement. Everyone was concerned about the children and worked hard to help them improve. Jenkins had a high percentage of aides that were parents of the children.

Berkshire had problems: NO organization. The principal did not participate in the school. Each teacher did what she felt she should. Schedules were not followed and there was a tendency by a few to "teach between the breaks," except when Karen was in the building.

Fogarty—our star. Fogarty had three excellent teachers. These were models for on-task behavior by the others. Everyone worked hard to achieve all that they could with the children. This was the one school where consulting time was not pulled to handle administrative problems. An organized school makes a difference.

## 1971-1972

The sun was warm; not too much rain. Just enough to bring the fruit to full ripeness. A good year. Not great, but close. The kind of year that makes you feel the strife and effort may be beginning to pay some dividends. We moved into a quiet place in the country.

An up year for Providence, too; one that suggested better things were ahead if we just kept plugging. It was definitely our best year in Providence. I have this problem with everything—not knowing when to quit. Fortunately for Karen, I don't go to Las Vegas and gamble.

### Administration

There were still some of the same old problems—absentee principals, no materials at the start of school, etc. Supervision was split to help handle problems of absentee principals. Mike worked very hard to involve the principals in what was happening at their schools. Mike improved steadily as a director. He enthusiastically supported the program. A disaster in previous years, continuous testing was scheduled and happened. For the first time advisers (supervisors) were able to give teachers reliable and accurate feedback on the test scores. The personnel procedures established the previous year worked extremely well. Aides that were hired had the abilities to do the job and knew what was expected of them. The personnel committee took their roles seriously and reviewed all new aides. Mike supported the position of his advisors and was able to get three very weak teachers to transfer out of the program. The parent program and PAC were still weak, but became better organized and started to

function smoothly. By the time school closed, I felt Mike was on his way to becoming a good director. He was still inefficient at times, and we had our moments, but he could be reasoned with and he made the right decisions most of the time.

### Supervision

Supervision of the four schools was split between two advisers and myself. Karen, being the smarter half of the team, opted for a classroom teaching position. I opted to continue the routine, although I knew the act wouldn't be funny, missing the straight man. We each took a school where there was no assigned principal. The Providence advisers split the coverage of Fogarty between them. An adviser was at Fogarty 5 out of every 10 school days. Lourdes and Berkshire received 8 days out of 10. Both local advisers were strong. My responsibility was Jenkins. I visited each other school every two weeks to work with the adviser and problems that people were having.

### Teaching

Out of the 24 teachers, 12 qualified for Federal Disaster Relief. Of those 12, three transferred out, "with a little help from friends," three worked hard and became good teachers, one left the profession to go on to advance degree work in education at a prestigious school, one improved a notch, to "fair," and the remainder stayed with us for yet another year. Principals were completely uncooperative in our push to get them to observe bad teachers and make sure that they did not get tenure. Transfer was the name of the game. Besides the *aide shuffle*, Providence plays the *pass the teacher* game.

### School Rundown

*Lourdes*. Improved, but still problems. Half of the teachers were inadequate. Organization of the school was better because one teacher spent a great deal of her time out of the classroom making sure that things ran well, but her groups suffered greatly. Behavior problems of the children were not as great. Lourdes was no longer a center for all the upper grade Follow Through children. Many of the previous years' second graders had been dispersed to other schools.

*Jenkins*. Improved, but still problems. The number of classrooms increased from four to eight. Half the teachers were inadequate. The school was organized. I was the defacto principal. Strengths continued to be an excellent aide staff, and the attitude—what we are doing is important. We had several severe behavior problems. I instituted a time-out room and it was effective with three of the four children that I used it with.

*Berkshire*. Real problems. Half the teaching staff was inadequate. Also the attitude was take a break and then teach a little. Several new teachers initially had little skills. They made great progress.

*Fogarty*. Still our star. Follow Through remained isolated from the rest of the building and the good teachers tended to serve as models. The student gains were not quite as good as they previously were.

problems still cut into our time. As defacto principal, I supervised the children before school started, worked out schedules and established a reward system for good bus behavior. Children were suspended from the buses with regularity because they couldn't sit still and talk quietly. Suspension from the bus resulted in non-school attendance. The children lived across town from the school. We rewarded good behavior with tickets. The room with the most tickets earned a special reward on Friday. Good bus behavior followed immediately. The administrator in charge of transportation was impressed. People were no longer complaining to him. He didn't have to come to the school to suspend and harrangue the kids. He told me he had never seen anything like it. (He was so impressed that he continued to suspend and harrangue kids at other schools. He missed the importance of reinforcers.)

This is the year that our work for the past two years paid off. Up to this point we had had severe behavior problems at each grade level. However, the kindergarten classes did not have them. This group and succeeding ones did not have any crazies. I feel this was a result of two factors: (1) small group instruction was being implemented at least passably in each room (kids learned and felt good about themselves), and (2) teachers and aides began to look at behavior as a management problem instead of "he is crazy."

## 1972-1973

The plan for the year was to make the Director knowledgeable about the actual teaching program and more visible in the classroom. The plan was a total flop. He became completely inefficient and unorganized. He could not order his priorities and stay on task. To get him to do the necessary jobs on time, Jean Osborn, the Oregon project manager, and I devised the following system. We made a list of important jobs and kept checking with Mike until the jobs were completed. Mike remained enthusiastic about the program. He was the only supporter that we had. Right—we were in trouble.

### Administration

The Providence School Department was reorganized by Dr. Smith, the superintendent. Everywhere there were new, younger faces. Providence was on the move. Unfortunately, the same moves were made previously by the tired, old faces. The new administrators were interested in entrenching and institutionalizing themselves and programs that were their babies. For example, before her retirement, the former Federal Programs Director had visited every Follow Through classroom. Her replacement never came near the classroom. I doubt he would have known a kid if he tripped over one. He went on to become superintendent of another school system in Rhode Island. (Another administrative skill I'm lacking—I can recognize a kid.) The reorganized school system made little impact on the classroom.

We pushed very hard this year to have principals become involved in what was happening in the classroom. We had two workshops to explain the program. We designed a principal observation form and worked with them on how to use it. It was never used. The new Jenkins Street principal responded to the

and aide in his school. This classroom visibility made a difference at Jenkins. The staff knew he was concerned about what they were doing. Out of the nine different principals that we had in Follow Through, he is the only one that was supportive and interested in the program. It's hard to make the big leagues with a batting average of only one hundred. After one year, he was pulled out of Jenkins Street and assigned to another school. The parents and staff objected vehemently, but with no result. The reason given for the move was that our program would continue to run regardless, and the other school needed a good principal desperately. (The "old lion" couldn't kill us, but he wanted to make sure we didn't get off our knees.)

At mid-year, the project was hit with a projected huge budget deficit. Money had to be returned to Washington because of too many "no shows" (too few children in the classrooms). The situation was compounded further by the School Department negotiating an aide contract without looking at our budget. Mike, the Director, was blamed for all of this. We had to lay off seven aides. Other aides had to be retrained to teach different areas. Two supervisors, Karen Davis and Marty, returned to the classroom. What had been a stable classroom situation again became a mess. In Providence, progress is never a straight line. I doubt it is a line.

### Supervision

This should have been our best year. We had to hassel the administration to get the people we wanted, but we got them. Prior to the Oregon summer workshop for supervisors, two new advisers had to be hired. The assistant superintendent interviewed the applicants and selected Joan (a 2nd year teacher) and Margaret our star basket case. He rejected Karen based on a 15-minute interview. After much pressure from Mike and myself he decided not to hire the "basket case." The assistant superintendent then attempted to hire a *non-Follow Through* teacher for the job. Fortunately, the people he wanted had enough sense not to take the job. This, plus pressure from Washington, forced them to follow the Memorandum of Agreement with Oregon on requirements for such positions. Karen was reinterviewed and appointed. (I have never been able to understand how in 15 minutes you can tell that an experienced, former supervisor could not hack the job. I guess that is one skill I need to become a full-time school administrator. Karen wanted to tell him to (blip blip) the second time around. I convinced her that it would be better for the program and the children to take the job. As mentioned earlier, she is the smarter half.)

We had one adviser for each school and an additional aide advisor. Everyone attended the Racine summer workshop for supervisors set up by Oregon. We were clear on our priorities and how to operate. Then the bubble burst. Joan resigned a few days before the Providence pre-service and ruined our plan. Joe picked Marty to replace Joan after consulting with me. Marty was an excellent teacher, but in dealing with people she had the subtle touch of an elephant. It was good that she returned to the classroom, forced by the budget deficit mentioned earlier. After Karen and Marty returned to the

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classroom, Barbara, the third adviser, stopped for a few months to have a baby. This left the aide adviser and myself to run the whole show.

## School Run Down

**Branch Avenue.** Our Lady of Lourdes was closed down and the children moved to Branch. (I opted for leaving some of the teachers at Lourdes, but they had to come along.) Busing problems followed us. We were given another absentee principal and the band played on. We had our best group of teachers, but several were still inadequate. Organization of the school was very weak. The staff was always out of the classroom.

**Jenkins.** Okay. Initial behavior problems. I instituted a ticket system that worked extremely well in solving most of the child behavior problems in the hall and cafeteria. I re-instituted the ticket system on the buses. As previously indicated, the new principal had a positive impact on the school. The weak teachers had improved to "fair." We had one new teacher that was "impossible." I had to have an aide re-teach her groups every day. I tried to get the principal to take appropriate action to ensure that she did not receive tenure. He told me that everyone got their tenure and one shouldn't even think otherwise. He played the *pass the teacher game* and made sure she transferred. She has since been promoted to an administrative position.

**Berkshire.** Same old story.

**Fogarty.** Excellent. Fully implemented. Karen was able to work well with the principal. She was able to get him into the classroom when there was a problem. They had a mid-year aide evaluation. Follow Through became a part of the school instead of that thing attached to the building. The old lion was trying harder, but as long as we had the energy to keep pushing back he hadn't yet devoured us.

Administration became a bigger problem than ever; I had to try to cover for a weak supervisor and by March, the entire project. I felt that even with the problems, we were making progress with the children and that we were implementing better than before. It was hard work to push, go around, ignore, and hassle 8 to 10 hours a day. But as long as the lion didn't get us, we still had a chance. I kept thinking the next year has to be better.

## 1973-1974

This was the year to institute a management system—to make teachers somewhat accountable—to achieve a measure of child progress through the program. Each six weeks the teachers were to project where each group would be at the end of a six-week period. The six-week periods were to coincide with the completion of a continuous test round. Progress would then be tied to performance. We never got out of the dug-out let alone into the batter's box. We weren't allowed to implement the system. Anything smacking of teacher accountability was a "no-no"!! The union took a dim view of such things. (Maybe we made the wrong move by dealing with the School Department for four years. We may have accomplished more by working with the union.) We could keep *coded graphs* on teacher pro-

gress. Teachers could not be identified by name. We could also suggest to teachers that they move the children faster, but could not require them to do so. The lion was slowly gnawing our (blips) off.

Providence is like a never-ending roller coaster ride. You wanted to get off, but the thing never slowed down. When you thought the worst hill or curve was behind you, a bigger one loomed up ahead. This year it was the time allotment. Mike's goal for the year was to get more social studies and science going in the classroom (to meet state curriculum guidelines). The method chosen was the *time allotment*. Specific times were established for each subject area. I agreed with the understanding that the times were to be flexible and we were not locking ourselves into a closed system. Mike had no such understanding, even though he presided at the meeting. We were now ready for a fun ride. Mike pressured teachers to adhere strictly to the time allotment and make no deviations. I applied pressure the other way. Low performers must be given additional teaching time. Mike and I fought. At one point he was going to investigate my actions. The teachers ended up ignoring the time allotment for the most part. The goal was achieved though. More science and social studies teaching happened. Teachers used their time more efficiently than in the past. The time allotment was finally resolved at the close of the school year. The segment chief in charge of Follow Through informed Mike that the time allotment was never intended to be followed exactly. The purpose was to serve as a guide to teachers. When someone stops the bleeding after a year, for a minute you think you have won a victory and then you realize that this is Providence and you are still on the same roller coaster.

## Administration

The administrators worked very hard and figured out a way to "get" us before school started. There were approximately seven teacher openings in Follow Through. Several excellent aides that had just completed their degree work through the Career Development Education Program were eligible for the positions. The aides had at least three years teaching experience in the classroom. They were interviewed by the principals along with other applicants. *None of the former aides were hired.* Ranked above them were five teachers with no experience, except student teaching. The rationale given was that the former aides had no experience in a *regular classroom* and, when Follow Through folded, they wouldn't be able to hack it. The message was clear to the aides—your program and experiences count for nothing. (By contrast, in Racine more than a dozen aides became Follow Through teachers through a similar training program.)

Pre-service started without the new teachers and six unfilled aide positions. Four aide positions were still unfilled by October. One thing you can say for Providence is that they are consistent.

The Director became more involved in trivial things. He couldn't set priorities. I had to push very hard to get even the most critical things done. We lost two absentee principals and gained two replacements. Effectively this resulted in more of the same. To get principals involved I tried the ploy of offering them a course with administrative credit. Two signed up. They were to observe every teacher in the building, go

over the Continuous Test results with an advisor every six weeks, and do some Providence observation forms on Reading I teachers. Neither one did any of this, even with prompting from me. At the end of the year both wanted to know if they got a B or an A for the course.

## Supervision

We were back to a strong lineup. Beside myself, we had two good full-time supervisors, one part-time supervisor and two staff advisors. The schools were split among the local supervisors. I was to oversee each school and work on specific problems that teachers were having. We instituted a flow chart with key formats. We tracked each teacher's groups and either trained them on the key formats immediately before they taught them or visited them on the first day that they taught the format. We set up monthly meetings to establish priorities, examine past priorities, look at teacher progress and address major problems. We managed to get through two meetings. Mike objected to much of what went on. He and I ended up fighting over trivia. What I then opted for was individual meetings with each advisor. In that way Mike was eliminated. At the first monthly meeting Mike hit us with the biggie—*supervisors can no longer supervise.* They may ask teachers or aides to do something, but under no circumstances could they direct a teacher or aide to do something. Mike was to make all the decisions. He was the one with the power. For a short time all problems were referred to him. On most problems, no action was taken. The advisors quickly developed the strategy of working around Mike. The damage was done though. The advisors felt powerless. Teachers were now able to play them off against the Director. Advisors felt that support for them was not there.

Major problems were referred to him. The few times that Mike tried to take appropriate action, he did not get the backup he needed. For example, an aide was referred to him for only teaching two lessons a week. After observing the aide, he set up a conference with her. She cussed him out, threw a notebook at him, and walked out. He suspended her. She was immediately reinstated by the school department and paid for any lost hours. Mike was a wee bit hesitant to attempt any more actions. Downtown's message to him was also clear.

The schools remain the same. Fogarty was good, Jenkins fair to good, and the others poor.

The year closed about as it began. Classrooms were about the same. Teachers were performing about the same level. The coaster keeps rolling.

## 1974-1975

Like spring, the start of a new school year brings forth the hopes of a new beginning, a rebirth, thoughts of fresh air and sunnier days. Karen and I moved to Oregon. (As promised earlier, we were brought in from the cold.)

Providence began the year in its normal state—complete chaos. The kid shortage was hitting the system hard. All non-tenured elementary teachers system-wide were suspended in June, 1974. The effect on us was that 16 Follow Through teachers had been suspended. At pre-service time this meant that teachers did not know their schools, grades, or even in some cases, if they had a job. Most were eventually placed in the program.

## Administration

Berkshire and Jenkins Street schools were closed and the children were divided among five schools. This brought the total number of schools to seven. Besides the "aide shuffle" and "pass-the-teacher," Providence added the "divided-they-fall" game. Seven schools created logistical problems. We had less freedom in grouping children. Also many schools presented the problem of how best to supervise them. With the exception of Branch, the dispersal meant full-time principals in all buildings. Two principals had not been involved with Follow Through before. Karen, now Project Manager, and I met with both. Both impressed on us how they wanted to get involved in the program, and in the classroom. Wow!! A breath of fresh air in Providence. It turned out not to be fresh. Neither set foot in the classroom or sat down and observed a group. At the end of their time with Follow Through neither knew much more than when s/he started. I stopped reporting to the one because she would fail to make needed follow-up visits. What she did was call the individual in and tell him/her that Gary had reported this and "we would have no more of that happening in the future." So I quit telling the lady what was going on in her school. The other bought his doctorate from Nova University, which just about says it all. Both took aides out of the program and used them for non-Follow Through purposes. However, a full-time principal did end the "teach-between-the break" teacher policy.

School opened with a shortage of 75 kids in Follow Through (below funded level). Steps were taken to recruit additional kindergarten children. There was considerable delay between enlisting the children and actually placing them in the program. Karen and I forced the issue. We met with the teachers and placed the children.

Prior to the start of school, Mike, Karen, and I had a very interesting conversation concerning Mike's job the past few years. Two years ago, Providence let him know that he was supporting the program too strongly, and "outsiders" were dictating too much of what was happening in the classroom. This resulted in the "time allotment" and the "year of hassle." Then, we applied great pressure and messed him up with his boss on this issue. He just had no idea what was happening.

After this discussion, Mike made positive strides to become a more effective Director. He made classroom visits and followed up on some major problems. There were two positive accomplishments with the personnel department. He got them to take action on chronically absent aides and to hire former Follow Through aides as teacher substitutes. On the other side, he wouldn't take action on grouping the new kindergarten children, subverted a transition agreement (discussed later), failed to follow-up on the parent visitation program, and allowed teachers to pull their classrooms out of the DISTAR material.

## Supervision

We again started with strong people. We had one new advisor (Providence's word for supervisor, if you haven't figured that out by now) and we lost one of the aide advisor positions. We set up a data-based system for observing teachers. We continued our flowchart inservice system. We established clear priorities and worked hard to meet

them. The number of schools in the program presented problems in trying to service people. Each advisor worked at five different schools. The year started well. After January, the advisors felt they lost control of the situation. Karen and I did not visit (from Oregon) from January until April (Karen was pregnant at this time). The advisors felt the needed leadership was not there and morale was down.

What began as a year with some promise, with people working together a little better, ended in complete discord. Providence hit us with a bomb!! The lion was finished toying around and was ready for the final kill. PROVIDENCE WANTED TO PHASE OUT FOLLOW THROUGH. Providence submitted a proposal for only the second and third graders. The stated reasons for the phase out were: (1) Providence would have to pay for some additional kindergarden teachers, as Title I would no longer pay for every kindergarden teacher; and (2) present Follow Through kindergardeners could be redistributed easily throughout the system to help alleviate shortage in neighborhood schools.

The School Department applied great pressure through Senator Pell, Head of the Senate Education Committee, and Congressional Representatives, to have their proposal accepted. We applied pressure for a gradual phase out, which would include the present kindergardeners. The parents petitioned and talked to anyone who would listen for a full Follow Through program. No one would listen, but we won. (A victory like this is worse than kissing your sister. What we did was prolong our death for three years.)

While in the fight over what shape, if any, Providence Follow Through would take next year, we had to have several contingency plans to serve the children. What we settled on was a *transition* day every week (preparing to leave DISTAR) with all the kindergarden, first, and second graders. The local advisors also drew up long lists of skills that the children needed to know to transition smoothly into a Providence classroom. When for a period it appeared that there would be no Follow Through Program, several teachers took their children out of the DISTAR materials completely. When Karen found out about this she asked Mike to direct the teachers to return to the DISTAR materials. He refused to do this. His bread was buttered on the Providence side this time. We went over his head and the teachers were told to return to the curriculum. The result was a large lesson-day loss in those rooms, plus a lot of teeth gnashing.

## Phase Down — 1975-1976

Providence again started with all non-tenured elementary teachers being laid off. After a time, chaos becomes order. This year we didn't get most of the teachers back. In their place we had tenured teachers who in no way, shape, or form, wanted to be in our program. This was the first inservice that I have ever held where people were screaming at me from the word go. (Usually they wait two or three days.) Only one of them became even an adequate teacher.

The director picture changed. The Providence proposal called for a half-time director. This half-time position was to be combined with a half-time director position of Providence's early childhood program. The early childhood program was not large enough to employ a full-time director. They rewrote the job specifications so that the man who was currently heading the early childhood program met the new set of qualifications. They then had open interviews and then hired him.

The new director, Lon, turned out to be an excellent administrator. He was efficient. He got the PAC reorganized and it functioned again as a group. He put the parent workers through training and restarted the home visit program initiated by Karen last year. He published a newsletter and used state funds to put out a pamphlet describing the program. Supervisor morale went way up. Everything was going along smoothly. Right—this is Providence and you know it is too good to last.

Mike filed a grievance. The grievance was based on the Providence School Department rewriting the job qualifications. They had taken out the need for a principal's certification. The State Board of Education ruled that changing the qualifications was a "no, no"!! A director was an administrator level position and the principal's certification was required. Lon lost his job. Mike was reappointed. The time between Lon losing his job and Mike being appointed took approximately two months. In June, Mike resigned and Lon was reappointed. What a ride! What a ride!

## Supervision

The number of schools was reduced from seven to five. This made life much easier for the supervisors. Lon was a positive influence on the supervisors. He attended to problems and got some principals involved in the process. The classroom situation was not good. Two of the three new teachers were very resistant to DISTAR. Two rooms had revolving doors for teachers. One had four teachers and the other had three during the year. As soon as we would get one trained, she would depart for a permanent position elsewhere. The positions we had were for *long-term substitutes*. They served as a rest stop. The union seniority-list rides again. The move back to Mike and the time in between sunk the supervisors' morale. They had a hard time demanding a tough criterion when the program was dying.

## The End — 1976-1977

The parents voted to end the program for the following reasons:

1. Providence School Department would not support an attempt to return Providence to a fully implemented K-3 site. The National Follow Through office had indicated they would support such a move, but the School Department was interested only in the K-4 program they were developing.
2. Classroom implementation fell off since phase down started.
3. Classrooms at some schools needed to be closed and those children bused to other schools. This meant some children would have been in four different schools in as many years.
4. Some children who were now in neighborhood schools would have to be bused across town.

tion in which the program was the loser. There was no way we could even come out with a tie. Providence's statement was clear—"We want the bucks, so we will put up with you for a few more years." Teachers and aides tried to transfer to any position outside of Follow Through which would be stable. The feeling that we can make a difference was gone. Providence said clearly that it didn't matter. For this reason, I feel any attempted phase down is doomed unless the system has made a clear commitment to institutionalize portions of the program. (Nationwide, Nixon tried to phase out Follow Through from 1972 on. Congress prevented him, but it had general demoralizing effects on all projects.)

## Conclusion

"Why?" and "What if?"...always those questions when you fail. Often you cannot pinpoint the reasons. Providence is different, as you probably have realized by now. When we started, the only group that wanted us in Providence was the parents. The teachers' union and State Board of Education voted against accepting the Direct Instruction Program. Within the Providence school administration only the Director of Federal

after our second year there. At our death, we still had only the parents.

At no time was there a commitment to the program and what we were trying to do. There was a commitment to the bucks. We were isolated from the regular schools by being housed in separate buildings. We were given less than part-time administrators which, in effect, meant we operated as best we could. Our Director sometimes worked at cross purposes with us depending on which side the bread was buttered. Moves to involve principals met with no success. The moves were from our level and not from the top down. Evaluations commissioned by Providence were so bad that Providence rejected them. Our data was suspect to them and couldn't be used. Our attitude and pushiness offended people the first two years.

The "why," then is simple—we were in a situation where we were not wanted. Our Attempts to change this were complete flops.

Unless all parties are willing to make the necessary commitment from the start, there should be no program. The lesson has been a painful one for me to learn. But after you've been in the Lion's den, the rest is downhill—or so said Daniel.

# Research on DI Teaching Methods

Several studies have been conducted to date by researchers in the Direct Instruction Project at the University of Oregon on procedures related to teaching small-group Direct Instruction lessons. Ten of these 13 experiments have been described in two volumes of technical reports. These can be referred to as: W. Becker and S. Engelmann (Eds.), Technical Report 76-1: Formative Research Studies. Eugene, Oregon: University of Oregon Follow Through Project, 1976; and D. Carnine and R. Gersten (Eds.), Technical Report 78-2: Formative Research on Direct Instruction. Eugene, Oregon: University of Oregon Follow Through Project, 1978. These reports can be obtained by writing to: Materials Secretary, Direct Instruction Follow Through Project, College of Education, University of Oregon, Eugene, OR 97403. A small fee is charged to cover costs of printing and mailing. For purposes of this list, studies will be referred to only by report number. The two studies not appearing in these volumes are in preparation and are not currently available. Three of the studies which are contained in the technical reports have also appeared in the *Journal of Applied Behavior Analysis*, as indicated.

**Setting Up the Group and the Lessons**  
Carnine, D. High and low implementation of direct instruction teaching techniques. (78-2)a.

Fink, W. and Sandall, S. A comparison of one-to-one and small group instructional strategies on a word identification task by developmentally disabled preschoolers (in preparation).

## Signalling Students' Responses

Carnine, D. & Fink, W. A comparative study of the effects of individual versus unison responding on the word reading performance of preschool children. (78-2)a.

Cowart, J., Carnine, D., & Becker, W. The effects of signals on attending, responding, and following in direct instruction. (76-1)

## Consequating Students' Responses

Carnine, D. Correction effects on academic performance during small group instruction. (76-1)a.

Carnine, D. The effects of two correction procedures on word acquisition by preschool children. (78-2)b.

Fink, W. Effects of a pre-correction procedure on the decoding errors of two low-performing first grade girls. (76-1)

Fink, W. & Carnine, D. Control of arithmetic errors using informational feedback and graphing. *Journal of Applied Behavior Analysis*, 1975, 8, 461. (76-1)

Kryzanowski, J. Praise effects on on-task behavior during small group instruction. (76-1)

Paine, S., Rosellini, I., & Qunitero, P. Maintaining the study behavior of seat-work students while conducting small group instruction. (in preparation)

## Pacing of Instruction

Carnine, D. Effects of two teacher presentation rates on off-task behavior, answering correctly, and participation. *Journal of Applied Behavior Analysis*, 1976, 9, 199-206. (76-1)b.

## Training Teachers

Carnine, D. & Fink, W. Increasing rate of presentation and use of signals in elementary classroom teachers. *Journal of Applied Behavior Analysis*, 1978, 11, 35-46. (76-1)

Carnine, D. & Silbert, J. *Direct Instruction reading*. Columbus, OH: Charles E. Merrill, 1979.

Carnine, D., Silbert, J., & Stein, M. *Direct instruction mathematics*. Columbus, OH: Charles E. Merrill, 1981.



# Direct Instruction for Social Skills

# The Social Behavior Survival

*A Systematic Approach to the  
Integration of Handicapped Children  
into Less Restrictive Settings*

By Hill M. Walker  
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This article describes the development and validation of a model program for the social integration of primarily grade level handicapped children into less restrictive settings. The model contains both the diagnostic procedures for fitting children and teachers together and a package of Direct Instruction procedures for the development of required social skills for mainstreamed settings. The SBS model program was developed with a three-year grant from the U.S. Office of Special Education Programs. Information is presented herein on four topics related to the development of the model. These are: (1) major findings from mainstreaming research on the social/behavior adjustment of handicapped children in less restrictive settings, (2) the purpose, rationale for, and elements of the SBS model program, (3) validity, efficacy, and replication studies on the model, and (4) school applications and usage guidelines for the program.

## Findings From Research on Mainstreaming

With the passage of P.L. 94-142, increasing numbers of mildly and moderately handicapped children are receiving at least part of their daily instruction in mainstream settings. It was assumed by the framers of 94-142 that the normalizing processes and developmental opportunities resulting from exposure to less restrictive settings would more than offset any deleterious effects associated with such placement. At present, sufficient data and followup studies do not exist to provide an unequivocal basis for accepting or rejecting this assumption. However, the social-behavioral adjustment of mainstreamed handicapped children is a topic of increasing professional concern to educators (Strain & Kerr, 1981; Asher & Taylor, 1981; Jones, 1978; Larrivee & Cook, 1979, & Schmelkin, 1981).

Handicapped children have to make two major social-behavioral adjustments within mainstream settings. That is, they must meet the teacher's minimum behavioral standards and expectations with respect to following classroom rules and responding academically. In addition, handicapped children must learn to deal with a new peer group of non-handicapped individuals, and to cope effectively with it. How well handicapped children have been able to make these adjustments? The available evidence suggests that numerous handicapped children have experienced considerable difficulty in these two areas.

Regular teachers have proved to be quite reactive to the demands and added burdens imposed by handicapped children who are difficult to teach and manage (Hunter, 1978; Lynn, 1981). This should not be surprising, since regular teachers have been traditionally encouraged to refer handicapped children for service in more restrictive

settings. This practice has had two major effects that impinge directly upon the mainstreaming process. First, teachers have been deprived of the opportunity to develop skills in accommodating such children. Second, the traditional availability of referral as a means of coping with children who are difficult to teach and manage has probably contributed to the reluctance of many teachers to accept them into their classes—in spite of the mandate of P.L. 94-142. Recent research by the author (Hersh & Walker, 1981), shows that regular teachers have high expectations and a very narrow set of behavioral standards for the social behavior of children in their classes. It is quite possible that the option to refer "difficult" children to special education has contributed to the development of such narrow standards.

Keogh and Levitt (1976) report that regular teachers are also quite concerned about: (a) having control over who is mainstreamed into their classrooms, (b) their ability to meet the needs of mainstreamed handicapped children, and (c) the availability of support services and technical assistance. These concerns are not surprising. In fact, they are to be expected given the relative isolation of regular teachers from the broad range of handicapped children.

Of equal and perhaps even greater significance to the development of handicapped children, is their ability to cope with the pressures and demands of the peer groups they encounter within mainstream settings. One of the major assumptions underlying P.L. 94-142 was that through exposure to non-handicapped peers, mainstreamed handicapped children would be exposed to normal standards and patterns of behavior, would acquire social skills and improve their social competence, and would engage in social participation with non-handicapped peers. What is the research evidence on this question?

Studies of mainstreamed handicapped children show that they do not automatically imitate the behavior of non-handicapped peers, nor do they interact with them on any kind of consistent basis (Gresham, 1981). A number of studies have shown that mainstreamed handicapped children have very infrequent social contact with their non-handicapped peers—even within free-play settings where the probability of such contacts is much greater. Gresham (1981) makes the point that handicapped children do not vicariously acquire social skills through observation of non-handicapped peer models unless they are instructed, prompted, trained, or reinforced for doing so. Thus, the assumption that handicapped children will become more socially skilled through simple exposure to non-handicapped peers appears untenable. Handicapped children must actively, socially participate to acquire social skills and develop social competence. The evidence strongly suggests they do not socially participate in mainstream settings.

The available evidence on the social acceptance of mainstreamed handicapped children by their non-handicapped peers is equally discouraging. Gresham (1981) reviews studies that show lack of peer acceptance for mental-

ly retarded, learning disabled, and emotionally disturbed (behavior disordered) children. It is likely that such lack of peer acceptance would be found across the broad range of handicapping conditions.

To summarize, the results of mainstreaming research indicate that handicapped children often experience significant difficulty in: (a) adjusting to the behavioral demands of regular teachers in less restrictive settings and (b) developing effective peer-to-peer social relationships that lead to social participation and acceptance by non-handicapped peers. Further, teachers in mainstream settings have expressed grave reservations concerning their ability to meet the needs of mainstreamed handicapped children and the availability of support services and technical assistance to facilitate the process. The SBS program was designed to address these problems.



HILL WALKER

## The SBS Program

The SBS Model Program focuses on the placement and integration components of P.L. 94-142. It provides a methodology for the social integration of handicapped children into less restrictive settings, and seeks to improve the child's adjustment capability in classroom and freeplay settings. Specifically, the program's major goals are:

- To select appropriate placement settings for the integration of mildly and moderately handicapped children into the educational mainstream.
- To identify the minimal behavioral skills and competencies required for a successful classroom adjustment in the target setting, and to identify the noxious social behaviors that are unacceptable to teachers.
- To prepare such children: (a) to meet the receiving teacher's behavioral expectations, and (b) to achieve adjustment to non-handicapped peer groups.

The major thrust of mainstreaming efforts has been to encourage the receiving target setting to accommodate to the handicapped child's skill deficits and needs. This process places a great deal of pressure on the management and instructional skills of teachers in

mainstream settings, and has achieved only limited success in exposing handicapped children to the potential benefits of social integration. The SBS program distributes the demands and logistical burdens of the mainstreaming process more evenly between the sending (special education) setting and the receiving (regular) setting by: (a) assessing the teacher's behavioral demands and expectations in the less restrictive setting, (b) using this information to select potential mainstream placement settings (and to prepare the target child to meet the expectations prior to actual integration), (c) identifying the receiving teacher's technical assistance needs in teaching and managing the handicapped child following integration, and (d) providing resource support and technical assistance services to ensure a continuing successful mainstreaming experience for the handicapped child, receiving teacher(s), and peers.

## SBS Program Components

The SBS Program has two major components: *assessment* and *intervention*. Together, they make it possible to assess the behavioral demands and expectations of less restrictive settings, and to systematically prepare the mainstream handicapped child to cope with them prior to actual integration.

**Assessment.** The assessment component, AIMS (Assessments for Integration into Mainstream Settings) is designed for use in:

- The selection of mainstreaming settings.
- Identifying the adaptive skills and competencies required in the receiving setting, as well as maladaptive social behavior judged unacceptable by receiving teacher.
- Providing information on the receiving teacher's technical assistance needs in teaching and managing the mainstreamed child.

The AIMS system contains the following instruments:

- The SBS Inventory of Teacher Social Behavior Standards and Expectations;
- The SBS Checklist of Correlates of Child Handicapping Conditions;
- The Social Interaction Code;
- The Classroom Adjustment Code.

AIMS provides an ecological assessment of potential mainstream settings, and relies upon teacher ratings of adaptive and maladaptive dimensions of child behavior for this purpose. Teachers rate item-descriptions of child adaptive behavior (e.g., makes his/her assistance needs known in an appropriate manner) in terms of whether they are critical, desirable, or unimportant to a successful classroom adjustment. Similarly, item-descriptions of maladaptive behavior are rated as unacceptable, tolerated, or acceptable. The resulting information can be used in the selection of placement settings, and as a tool in teaching required mainstream behavioral competencies.

The Correlates Checklist identifies conditions and characteristics often associated with disabilities that could cause teachers to resist placement of handicapped children who manifest them. The Classroom and Social Interaction Observation Codes are de-



# Skills Program (SBS)

signed for use in assessing the handicapped child's classroom and peer-to-peer adjustment status following integration. References on the AIMS system are Walker and Rankin (in press) and Hersh and Walker (in press). A manual for the AIMS assessment system is currently being prepared.\*

**Intervention.** The social skills training program called ACCEPTS (A Curriculum for Children's Effective Peer and Teacher Skills) is used to teach critically important teacher and peer-to-peer behavioral competencies essential for a successful adjustment to the behavioral demands of mainstream settings, and can be used either independently, or in collaboration with the AIMS assessment system. The ACCEPTS program contains the following elements:

- A nine-step instructional procedure based on principles of direct instruction.
- Scripts for teaching 4 critically important teacher-child behavioral competencies and 24 peer-to-peer social skills.
- Videotaped examples and non-examples of the skills being taught.
- Behavior management procedures for use during the teaching process and for strengthening correct applications of the skills in playground and classroom settings.
- Guidelines for using the curriculum, and for training others to implement it.

Table 1 contains a listing of the skills taught by the ACCEPTS program.

The ACCEPTS program cognitively teaches social skills and then uses coaching and behavior management procedures in natural settings (classroom and playground) to foster demonstration and actual use of the skills.\*\*

## SBS Program Studies

The SBS model program was developed from 1979-1982. Studies of the completed model's efficacy and utility in facilitating the mainstreaming process have not been conducted by school districts to date. However, a number of studies are completed and ongoing on both the AIMS system and ACCEPTS program.

**AIMS.** The Walker and Rankin (in press) article cited above describes the initial validation and development of the SBS instruments. A large number of researchers/practitioners are currently using the instruments in their research and/or conducting studies on them. These studies will be incorporated into the AIMS manual and submitted for commercial publication by the summer of 1983.

**ACCEPTS.** Two major studies of the ACCEPTS program were conducted by the author and his colleagues during its development. In study one, a posttest only, experimental-control group design was used to assess effects of social skills training (see Walker, McConnell, Walker, Clarke, Todis, Cohen, & Rankin, in press) via the ACCEPTS program. Twenty-eight handicapped children were randomly assigned to one of three groups—Group 1: social skills training plus contingency management procedures; Group 2: social skills training only; and Group 3: control. There

were 10 children in Group 1, 8 in Group 2, and 10 in the control group.

Results favored the two experimental groups over the control group on all three dependent measures. Statistically significant differences were obtained on the Criterion Roleplay Test and classroom observation data. One of three interactive measures (*interactive inappropriate*) derived from playground observations approached significance at  $p = .06$ . No significant differences were obtained between the two experimental groups on any of the measures. However, Group 1 children were favored on teacher ratings of classroom skills and peer-to-peer skills, as well as on playground observations.

**Table 1**  
**ACCEPTS Skills**

### Classroom Skills

1. Listening to the Teacher
2. When the Teacher Asks You to Do Something
3. Doing Your Best Work
4. Following the Classroom Rules

### Basic Interaction Skills

1. Eye Contact
2. Using the Right Voice
3. Starting
4. Listening
5. Answering
6. Making Sense
7. Taking Turns Talking
8. A Question
9. Continuing

### Getting Along Skills

1. Using Polite Words
2. Sharing
3. Following Rules
4. Assisting Others
5. Touching the Right Way

### Making Friends Skills

1. Good Grooming
2. Smiling
3. Complimenting
4. Friendship Making

### Coping Skills

1. When Someone Says "No"
2. When You Express Anger
3. When Someone Teases You
4. When Someone Tries to Hurt You
5. When Someone Asks You to Do Something You Can't Do
6. When Things Don't Go Right

These initial evaluation results were encouraging, but also suggested areas in which the intervention procedures could be strengthened. The intervention package was revised to improve its teachability, power, and instructional precision. The revision included a more intensive curriculum and the addition of group contingencies to the behavior management system to involve peers more directly in the process of improving the social-behavioral competence of target handicapped children.

Study two evaluated effects of the revised and expanded version of the ACCEPTS curriculum. An experimental-control group design was used. Handicapped children in grades 2 to 5 were randomly assigned—10 to the experimental group and 10 to the control group.

Children in the experimental group received: (a) direct instruction on critical classroom and peer-to-peer social skills,

(b) *individual* contingency management procedures to increase the use of critical classroom skills, and (c) coaching and group contingency management programming to increase the use of peer-to-peer social skills in playground settings. Teacher ratings and behavioral observations of classroom and peer-to-peer social skills were collected for all children at four time points: (a) before training, (b) during training, (c) immediately following the end of training, and (d) at two-month follow-up. In addition, a criterion roleplay test was completed for all participating children (experimental and control) immediately after training.

As in study one, the results showed significantly higher performance levels for experimental children on the criterion roleplay test. However, the experimental children's regular teachers did not perceive that there had been significant changes produced in their classroom and playground behavior even though observation data indicated that this was the case. Statistically significant changes were produced for experimental children on three measures derived from direct observations of their behavior in classroom and playground settings. These were: (a) percent of time spent on task (classroom), (b) percent of time spent engaged in social participation with peers (playground), and (c) percent of total interactive behavior having verbal content (playground). Significant changes on these measures did not occur for control children.

Consumer satisfaction measures of the ACCEPTS program have been consistently high and positive. This has been true of teachers, psychologists, and administrators exposed to the program.

Implementation of ACCEPTS has been successfully replicated three times by other professionals. There are currently four independent replications being conducted of it around the country. Results of these studies will be incorporated into the program.

## Additional School Applications

The AIMS system and ACCEPTS curriculum were designed for use in the mainstreaming process. In combination, they provide an integrated assessment-intervention approach to some of the problems encountered in the integration of handicapped children into less restrictive settings. However, the two components can be used independently of each other.

Additional program applications would include:

### For AIMS

- Determining the inservice needs of regular and special education teachers in the area of behavior management.
- Providing a basis for assigning teachers to students, and vice-versa.
- Identifying adaptive skills and competencies judged essential (across teachers) for a successful classroom adjustment.

### For ACCEPTS

- Teaching critically important peer-to-peer social skills to entire classes of pupils in order to improve overall social competence and to facilitate acceptance of mainstreamed handicapped children.

- Improving the appropriate behavior levels of both non-handicapped and handicapped groups of pupils.

Guidelines for the use of both AIMS and ACCEPTS are contained in their manuals. They should be followed carefully in applying both programs.

\* Prepublication copies of the SBS Inventory and Checklist can be obtained from the author by writing to SBS, 350 Clinical Services, University of Oregon, Eugene, Oregon 97403.

\*\* The ACCEPTS curriculum and accompanying videotape is published by the PRO-ED Publishing Co. of Austin, Texas. Pricing and ordering information can be obtained by writing to PRO-ED, 5341 Industrial Oaks Blvd., Austin, Texas 78735.

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## Call for Articles

This newsletter is intended to be a consumer-oriented publication. You, the readers, are the consumer group. Therefore, we very much want your input in future issues. The editors invite your contributions of manuscripts, comments, ideas, inquiries, or information suitable for publication in the DI News. Any item relevant to direct instruction is appropriate for the News. A working list of the types of items the News will publish, along with submissions guidelines for each, appears in this issue. All submissions will be edited for length, readability, and technical accuracy prior to publication. Issues will be published in fall, winter, spring, and summer. Please submit (postmark) all items no later than the first of September, December, March, and June.

# Strategies for Special Ed Resource Rooms

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Educational researchers have examined a number of teacher and student variables in their attempts to identify specific teacher behaviors that result in student achievement gains (e.g., Doyle, 1981; Medley, 1977; Rosenshine, 1976; Dunkin & Biddle, 1974). A pattern of teacher behaviors and instructional management techniques has emerged from this research. The techniques have been validated in experimental studies in regular classrooms, as summarized by Gage and Giaconia (1981). The effective teachers demonstrated behaviors that comprise a model of teaching known as direct instruction (Brophy, 1979a, 1979b; Good, 1979; Berliner & Rosenshine, 1976).

Carnine (1981) cited four direct instruction presentation techniques which have been shown to be functionally related to student achievement in previous studies: (1) rapid pacing, (2) frequent praise, (3) clear signals, and (4) consistent immediate corrections. Rosenshine (1978) emphasized the academic focus of direct instruction activities and stated that such activities are related to progress in reading and mathematics. Rosenshine also stated that direct instruction teaching activities are "...focused on academic matters where goals are clear to students; time allocated for instruction is sufficient and continuous; content coverage is extensive; student performance is monitored; questions are at a low cognitive level and produce many correct responses; and feedback to students is immediate and academically oriented" (Rosenhine, 1978, p 10). Although direct instruction has been used primarily in regular and compensatory education to date (i.e. Title I, Follow Through), it appears to have considerable potential in other areas, as well. Most notable of these is special education.

Since the available special education literature contains few references to direct instruction, a pilot study was undertaken to assess the current use of direct instruction strategies in two types of resource room programs ("LD" and "EMH" Programs) and to determine the potential of the technology for facilitating non-categorical special education. A second purpose of the study was to observe the overall instructional and classroom management systems used in resource rooms.

Although the two populations studied have typically been considered separate and distinct by virtue of their diagnosis, many special educators have argued that the differences are minimal for instructional purposes (e.g. Hallahan & Kauffman, 1976). In Kentucky, the teachers who believe that combining students and disregarding labels will result in better instruction and less duplication of effort can submit a variation plan to the State Department of Education. If the plan is approved, the teachers can group their students by academic needs rather than by disability labels. If differences in the two programs are minimal, and if similar activities occur in both settings, the results of a study such as this should provide support for the variation plan

concept and for non-categorical special education.

## Procedures

The pilot study took place in eight elementary resource rooms in a Kentucky metropolitan school district. The eight teachers, all females with two to seven years of teaching experience each, were selected for observation. The number was evenly divided between resource room types. Five of the classrooms were located in suburban schools; three were located in inner city schools.

The students attended resource rooms approximately one to three hours daily, but were in regular classrooms for some academic and all non-academic activities. Students in either type of program also may have had behavior problems, but such problems were not the primary cause of their placement.

Observations lasted at least one hour each and occurred when the teachers were actively involved in instruction. Three procedures were used to collect the data: an observation coding system, a Teacher Interview Schedule, and a sampling of on/off task behavior. The observation coding system was a modified version of the Direct Instruction Observation System developed by Englert and Sugai (1982). This system permits coding of a number of student and teacher behaviors including number of signals used, trials per minute, percentage accuracy of student responding, percentage of verbal praise, and the percentage of student errors corrected.

The Teacher Interview Schedule consisted of questions related to the following areas: (1) Amount of teaching experience; (2) Number of students served; (3) Amount of individualized and group teaching; (4) Information on behavior management and reinforcement systems; (5) Procedures for seatwork (when assigned, how corrected, etc.); (6) Availability of immediate teacher assistance; (7) Teacher activities during time periods between individual and group instruction; (8) Number of students totally mainstreamed this year; (9) Cooperation of the regular classroom teachers in integrating handicapped students into their classes.

The on/off task sampling was conducted to determine how well students worked independently while the teacher conducted groups. The observer glanced around the room approximately every five to seven minutes and counted, then recorded, the number of students off task.

Other naturalistic information was also gathered. A diagram of each classroom was drawn, descriptions of the teacher's procedures for managing activities were written, and an anecdotal record of the events occurring during the observation period was completed. (A summary report containing individual data for all of the teachers may be obtained by writing to the author.)

## General Results and Discussion

The observations and interviews revealed that direct instruction components were being used by teachers in resource rooms for learning disabled and educable mentally handicapped

students. Of the four presentation techniques cited by Carnine (1981), only rapid pacing was not observed. Most teachers used verbal praise, some used signals, and some used consistent immediate corrections. However, no teacher showed systematic usage of all the procedures.

Several teacher behaviors complementary to the direct instruction model were observed in both types of classrooms: scanning the room to check on individuals while conducting a group, using specific praise for those students who were on task, modeling of desired behaviors, using attention signals, and providing rules for transition times. (For additional discussion of these behaviors, see Englert & Thomas, 1982.)

Some differences in instructional management procedures between the resource room types were observed. The EMH teachers had more group activities than did LD teachers. EMH teachers also reported more requests for help from individual students. These teachers either left the group to provide assistance or allowed individual students to interrupt the group with questions more often than did LD teachers. Two teachers commented, however, that they were trying to wean their students away from reliance on immediate attention, because regular classroom teachers had complained that special education students tended to get upset if they did not get help promptly in their rooms.

Only minimal differences were found between classroom types on classroom organization and management factors. Both types of teachers had about the same number of students per day, for comparable lengths of time. Off-task behavior was not differentiated by students' labels. All teachers used a similar behavior management system that permitted students to earn free time or a special activity for on-task behavior and work completion. Teacher praise was slightly higher in EMH than in LD classrooms. All teachers used a similar seatwork assignment distribution procedure (e.g., folder or box). The teachers typically used a help tag system or had the students raise their hands when they needed assistance instead of leaving their seats and approaching the teacher.

None of the teachers had totally mainstreamed any of her students during the academic year. All but one teacher said cooperation from regular class teachers was generally good. The resource teachers often avoided placing students with regular teachers who were known to be negative about having handicapped students in their classrooms.

## Conclusions

The direct instruction model appears to hold much promise for non-categorical resource room instruction. Although most of the research to date has been in regular classrooms, this study shows that special education teachers use components of the model — albeit not systematically. Since the special education teachers teach basic skills, training them in correct use of direct instruction methodology would assist them in better attaining their instructional goals.

The differences between the classroom types observed were minimal. The similarities of the instructional and classroom management strategies seem to support non-categorical instruction. Such combining of students would permit implementation of direct instruction techniques for small groups based on academic needs, reduce emphasis on labeling of students, and prevent duplication of effort by the special education teachers.

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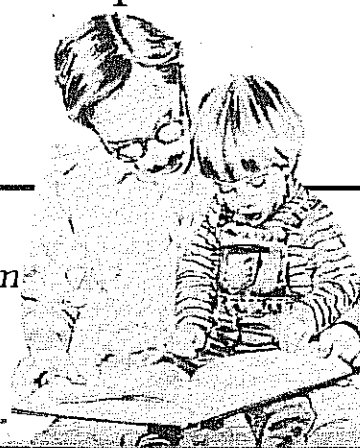
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# Excellence in Education Awards Call for Nominations

Each year the Association for Direct Instruction honors those who have made distinguished contributions to excellence in Education. The award winners last year were Lorraine Killion of Houston (classroom teaching), Thaddeus Lott of Houston (school administration), Pepe Quintero of Salt Lake City (secondary teaching), and Galen Alessi of Kalamazoo (teacher training and research).

The awards seek to recognize those who have distinguished themselves by their continuing commitment to excellence in education for all students. Through this recognition, the ADI Board seeks to illustrate to others what can be accomplished when commitment and Direct Instruction technology are put together.

Honorees are selected by the ADI

Board of Directors from nominating letters submitted to them. You may nominate candidates for one of four categories: (1) elementary teacher, (2) secondary teacher, (3) school administrator, or (4) university trainer of school personnel and/or researcher. **NOMINATIONS MUST BE RECEIVED BY JULY 1, 1983.** Send your letter of nomination to ADI BOARD (HONORS), P.O. Box 10252, Eugene, OR., 97440. In your letter, document what your nominee has done to earn your nomination. Be sure to give an address and phone where we can get more information from you if needed.

Realize that many more capable and deserving persons will be nominated than can be recognized this year. But remember, there is another year.

## The DI Philosophy

- THERE IS A VIABLE TECHNOLOGY OF TEACHING
- TEACHERS ARE RESPONSIBLE FOR CHILDREN'S LEARNING.
- EVERY CHILD CAN BE TAUGHT.

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- c. Sustaining membership... \$30 or more/year (helps to insure our survival).
- d. DI News subscription only... \$5/year.

ADI sponsored products and events include books and other materials published or marketed by the Association (DI Reading, DI Mathematics, Theory of Instruction, the Annual Direct Instruction Training Conference, and on-site training/consultation available from ADI staff or contractors).

The Direct Instruction News is published four times a year (Fall, Winter, Spring, Summer).

To join the association, clip out this form and mail it in.

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## DI at ABA - 1983

The Ninth Annual Convention of the Association for Behavior Analysis will be held May 26-29, 1983, at the Hyatt Regency Hotel in Milwaukee, Wisconsin. This year's convention will feature nearly two full days of presentations on Direct Instruction, as well as many other events of interest to teachers, administrators, professors, researchers, and other educators. For information on the convention, contact ABA in care of the Department of Psychology, Western Michigan University, Kalamazoo, MI, 49008 or call (616) 338-1830. For information about the Hotel, contact the Hyatt Regency-Milwaukee. Their toll-free reservations number is (800) 228-9000. A partial listing of DI-related events scheduled for the Convention (those we know of as of this date) is provided below.

### Thursday, May 26

7-9 pm ABA Special Interest Group on Direct Instruction/Association for Direct Instruction Display Booth at ABA Social Hour.

### Friday, May 27

9-10 am Siegfried Engelmann "Science, Logic, & Learning" (invited address).

10-12 am Stan Paine (chair), Dan Hursh (discussant); Craig Darch, Russell Gersten, Siegfried Engelmann, Marilyn Monteiro (presenters) "Direct Instruction: The Research-Service Continuum" (symposium).

2-3:30 pm Stan Paine (chair), Siegfried Engelmann (discussant); Russell Gersten, Linda Meyer (presenters) "The High School Performance of Follow Through 'Graduates': Enduring Effects of the Direct Instruction Model" (symposium).

4-5 pm Direct Instruction Conversation Hour (opportunity for informal discussion with many of the direct instruction presenters).

5-6 pm Stan Paine (chair), Marilyn Monteiro (vice-chair) "Meeting of the ABA Special Interest Group on Direct Instruction" (meeting).

### Saturday, May 28

11:30 am-

1 pm Marilyn Monteiro (chair), Stan Paine (discussant) "Interrelationship between Behavior Analysis and Direct Instruction" (symposium).

1-2 pm Lynne Anderson-Inman "A Mainstreaming Dilemma: Teaching for Acquisition vs. Teaching for Generalization" (invited address).

1-2 pm Jack Michael (chair) Jane Howard, Kurt Johnson (presenters) "An analysis of Personalized Systems of Instruction, Direct Instruction, Computer-Assisted Instruction, and Precision Teaching" (paper session).

2-4 pm Elizabeth Goetz (chair), Stan Paine (Discussant) "Engineering Early Reading" (symposium).

Still to be scheduled is a Direct Instruction Poster Board session, featuring informal presentations of direct instruction research by a dozen different investigators. Also, there are undoubtedly a number of other sessions at the convention which we have not yet heard about which will be of interest to direct instruction followers. In short, the Convention has much to offer to those with direct instruction interests. We are confident that if you attend, you will not be disappointed. We hope to see you there.

## Advertising Policies and Rates

The Direct Instruction News will publish advertisements for materials (programs, books), training (conferences, workshops), and services (consultation, evaluation) related to direct instruction. All proceeds from the sale of advertising space will be used to help pay publication costs incurred by the News. Ad sizes and corresponding costs are as follows:

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