Research on Use of Language Experience in Beginning Reading

by Steven A. Stahl
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Western Illinois University, Macomb

Ed. Note. This report is a summary prepared by Wes Becker of a 39-page manuscript by Stahl and Miller. Those wishing more details can contact the authors at the Department of Elementary Education, Western Illinois University, Macomb, IL 61455. (800) 725-8973

Approaches to beginning reading instruction which focus on the use of the child’s own oral language as a bridge to beginning reading instruction have been given a variety of names over the past 40 years. They have been termed “activity approaches,” “informal approach,” “language experience approaches,” and, most recently, “whole language approaches.” While the approaches described by these labels are not identical, they have a common focus on reading for meaning and the use of the child’s oral language production. We will use the term “Language Experience” approaches, since it is the most common descriptor of these approaches. In deciding to include studies in this review, we insisted that roughly half of the reading materials involved at least as much determination of content from reports based on the children’s oral productions.

Selection of Studies

In the U.S. Office of Education (USEO) First Grade Studies, the latter occurred in the late 1950’s (except for a few longer-term follow-ups) and represent 16 references in our full report. Only 13 of the 26 USEO studies provided enough information for use in a meta-analysis. (In a meta-analysis, the magnitude of difference in standard deviation terms is used to determine an overall effect for a group of studies.) The 13 studies gave an 84 difference in measures of effect sizes for the 26 USEO studies. There were 71 effect sizes in the USEO First Grade Studies.

Evaluation of Effects

Two procedures were used to summarize the effects. First, when the data could be translated into effect sizes, this was done by taking the mean difference between the Language Experience Group and the Basal Group and then dividing by the standard deviation of the Basal Group. This procedure gives an effect size expressed in standard deviation units (Glass, McGaw, & Smith, 1981). In some cases, the pooled standard deviation for both groups had to be used. There were 116 comparisons possible using this procedure.

The second procedure simply counted the number of effects significantly favoring the Language Experience or Basal Groups, or neither. There were 249 comparisons possible using this procedure.

Results

Overall

The meta-analysis for all 116 effect sizes showed a mean effect of +.06 (SD =.61; range .43 to 1.66) favoring the Language Experience Groups. This mean effect was very small and not significantly different from zero. Overall, the Language Experience Groups did not do significantly better than the Basal Groups.

In looking at just the number of significant differences, out of 149 comparisons, 35% favored Language Experience Groups, 13% favored Basal Groups, and 52% were non-significant. By chance alone, 5.6% would favor each group. A Chi-Square test showed the number of significant differences to be more than one would expect by chance, suggesting that both Language Experience and Basal Programs may have had different effects for different subsets of students. Further analysis of the studies were made to explore certain subsets of the data.

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Pretask Requests Help Manage Behavior Problems

by Keith Sterrey and Robert H. Horner
University of Oregon

Behavioral programming focused on inappropriate behaviors often omits the manipulation of consequent events. When applying Direct Instruction logic to programming for these behaviors, Engelmann and Colvin (1983) recommend focusing on manipulation of antecedent events. This manipulation of antecedent events is a critical feature of Direct Instruction technology.

Some of these antecedent events are the order of examples presented to the learner, the range of variation in the examples, the number of examples presented, the frequency and duration of practice, and the prerequisite that are presented (Engelmann & Colvin, 1983). Pretask requests are an application of Direct Instruction procedures and are used in managing students with severe behavior problems.

Pretask Requests

Pretask requests are a procedure designed for situations in which an adaptive pattern of responding competes with a long-standing inappropriate behavior (Horner & Billinghurst, in press). Pretask requests are an antecedent strategy in that the procedure is used to keep inappropriate behavior from occurring. Pretask requests also have been referred to as behavioral momentum (Mace, Hook, West, Lalich, Zellarelli, & Brown, 1987), have foundations in animal research (Nevin, Mandell, & Auk, 1983), and have been recommended for use by Engelmann and Colvin (1983). Pretask requests involve identifying 3-5 simple responses that: (a) the learner can already perform, (b) require a very short time to complete, (c) are from the same response set as the targeted, adaptive response, and (d) have a high probability of being performed following presentation of a teacher request. These requests are then followed by a “difficult” request that the learner has not performed successfully, and is likely to resist via undesirable behavior. A request consists of an interaction that alternates, in which the learner frequently engages in inappropriate behavior.

In recent application of this procedure, we have identified three major situations in which to use pretask requests. The first is during transitions to avoid what is called “inappropriate ways out.” This is when a student is engaged in one task and another, pretask requests can be used to facilitate appropriate responding during the transition. This allows giving the student an opportunity to engage in inappropriate behavior.

The second situation is when you want to strengthen the desired responding (acquisition of skill) by the student. In this situation you interspers pretask requests in tasks which the student has trouble performing or is still learning. This allows the student to make a high density of correct responses and receive reinforcement while learning new tasks.

In the third situation, pretask requests are used to interrupt a chain of behavior that typically leads to inappropriate responding. Delivery of a pretask request only in a chain increases the likelihood that the inappropriate behavior will be avoided, and when student starts to engage in inappropriate behaviors you use the pretask request so that the student is engaged in appropriate behavior which is likely to continue rather than the inappropriate behavior. Pretask requests should be used only if there is a high enough level of reinforcement and antecedent prac- tice for the appropriate behavior, otherwise the pretask request can inadvertently func- tion to reinforce the inappropriate behavior.

Examples of Pretask Requests

Singer, Singer, and Horner (in press) used pretask requests with four elementary students with moderate to severe disabilities that had extensive histories of noncompliance to teacher requests. The pretask requests were used for the transition when the students come in from recess at three different times during the day.

During baseline, when the student came in from recess the teacher met each student at the door and delivered the request, "go to group now," while pointing to the appropriate set of chairs in the classroom. The students demonstrated low rates of compliance (17% to 33%) during this phase of the study.

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Information in this issue on these upcoming ADI Training Opportunities:

March 18 & 19 • Yakima, Washington
Washington State ADI Mini-Conference
June 27-29 • Arlington Heights, Illinois
Seedorf Midwest Direct Instruction Institute
August 1-5 • Eugene, Oregon
2nd Eugene ADI Conference
August 1-13 • Kansas City, Missouri
Kansas City ADI Institute
August 15-19 • Salt Lake City, Utah
Third Salt Lake City ADI Institute
Dear Editor:

I received your letter in "The Editor's Desk" of the Summer 1987 issue of ADI News asking for more articles. Our basic skills program has been so successful at the Big Piney Middle School that I thought it might be a good idea to let others know what we are doing.

Last year I was hired to set up a basic skills program for the Big Piney Middle School. The principal, Mr. Johnson, told me about the corrective reading and corrective math direct instruction programs at the beginning of the year. When he saw how successful they were, he then encouraged me to offer the spelling and written language direct instruction programs. I had used these programs for two years previously in a kindergarten and sixth grade remedial group. I had received my masters from the University of Wisconsin at Madison and at that time I received my training for using direct instruction programs. Dr. Sara Varner and her two doctoral students, Lori Bristohlen and Ann Graves, did an excellent job teaching the theory behind the direct instruction programs and how to implement them. With my direct instruction background and the principal supporting me, I was able to set up a successful basic skills program.

If you would like to see this article in the ADI News feel free to edit any part of it. I hope you enjoy reading the results as much as I have enjoyed achieving them.

Sincerely,

Jenitta Sommers
Basic Skills Teacher
Big Piney Middle School
Big Piney, WY 83113

Ed. Note: See article on page 4. Let's hear from more of you!

Editor's Note:

The Editor's Desk is a feature in ADI News, published during winter, spring, and summer, and is distributed by mail to members of the Association for Direct Instruction. Membership and subscription information may be found on the last page of this newsletter. Readers are invited to submit articles for publication relating to DI. Send contributions to: The Association for Direct Instruction, P.O. Box 10238, Eugene, Oregon, 97440. Copyrighted by ADI, 1988.

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ADI News

Advertising Rates

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Pretask Requests - Continued from Page 1

During the pretask requests phase, the teacher met the student at the door and delivered an individualized set of pretask requests for each student (i.e., "give me five," "shake hands," "say your name") by first saying "go to the door."

If the student complied within three seconds they received verbal praise from the teacher. The results from the study showed that each of the student's compliance increased to, or near, 100% when the pretask requests were used.

Mace, et al. (1987) used pretask requests related to response acquisition in three different experiments in a group home with adults who had severe handicaps. The pretask requests were used in the inappropriate and aggressive behavior. During baseline, the students were instructed to "talk to the person," "show me how," "come here," etc. For task variation it was necessary to establish that the students knew how to perform and enjoy doing them.

Finally, the teacher must establish the pretask request as part of the students' school day. It is important to emphasize that pretask requests are a preventive strategy and should not be used as a punishment procedure that follows inappropriate behavior.

Discussion:

The clinical experience with pretask requests has been good. An increasing number of teachers and practitioners are finding pretask requests an effective and practical tool for managing behavior problems. Because pretask requests are nonaversive and try to keep the inappropriate behavior away, they are used more readily in integrated community environments than strategies that follow inappropriate behavior. It is important that the requests be functional, age-appropriate, and with the principles of normalization. The requests should be tied into functional curricular activities wherever possible.

We have some applied work with pretask requests, but we're not sure why they work. The experimental validity of pretask request remains undefined and more research is needed. The theoretical premise is that the pretask requests are functional because they are from the same class of responses as the desired response (compliance with request). (Engelmann & Colvin, 1983).

Another possibility is that the reinforcement from the delivery of the pretask request is an important factor. (Engelmann & Colvin, 1983).

The other possibility is that the pretask requests serve as a stimulus or setting event that there is a functional relationship in the behavior. A further possibility is that stimulus generalization has occurred in which there is a spreading of the effects of theumes of pseudo-compliance which have kept associated with reinforcing conditions which have not been associated with reinforcing (Catania, 1988).

The support of students who have behavioral or other disabilities is not the main point. The most pressing obstacles to effective education, delinquency, isolation, and community integration are severe, actual behaviors. Performance of these behaviors has reliably predicted the removal of individual students from the mainstream of society (Hill & Brustein, 1984). Schuck (1984) states that there is a growing consensus that extreme, excess behaviors should not serve as justification for segregation, isolation, institutionalization, and neglect. However, the need to exist for a well-documented technology that supports people with severe excess behaviors in community settings.

Because of concerns with adverse procedures in managing behavior problems (Giusa, Helmsten, Turnbull, & Kowalset, 1995),
Cognitive Behavior Modification, DI, and Holistic Approaches to Educating Students with Learning Disabilities

By Sara G. Turver, Ph.D.

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Editor's Note: Sara Turver first graced the pages of the DI News while her last issue with her report on the happenings, learnings, and excerpts of The First Moreover. This article will be a lot "adventure" to some, but it represents a profound analysis and interpretation of how DI theory and programs fit in with other mainstream ideas about how children should be taught. I personally look forward to more contributions to the ADI News from Dr. Turver.

In this paper, cognitive behavior modification (CBM), Direct Instruction (DI), and holistic education of students with learning disabilities are compared for the purpose of identifying similarities and differences in (in)effective practices. An overview of the approaches is offered by comparative discussions organized around four distinctions: (a) specific vs. general, (b) top-down vs. bottom-up, (c) structured vs. unstructured, and (d) effectiveness vs. ineffectiveness. In a final discussion section, some conclusions and recommendations are offered.

All three of the approaches included in this paper are considered to be cognitive behavior strategies that are not directly observable. However, each of these cognitive approaches has retained some elements of the purer behavioral approaches that were so popular in special education in the 1970s. Those behavioral elements will be addressed in this paper as well.

Overview

Various CBM programs and procedures have been developed for the purpose of teaching general cognitive and/or meta-cognitive strategies rather than specific skill or content. Among them are Meichenbaum's (Meichenbaum & Goodman, 1971) "What's my problem? What's my plan?" problem solving program, Deshler's (Deshler, Werner, Schirmer, & Alley, 1982) training program for teaching teachers of students with learning disabilities, and Hallahan's (Hallahan, Knodler, & Lloyd, 1983) procedures for teaching students to self-monitor their own attention. In Meichenbaum's program, self-questioning, the child is taught to ask themselves questions such as "What's my problem? What's my plan?" when confronted with a problem. To be able to teach the student to verbalize statements to self-correction, self-evaluation, and self-enforcement as the plan is being executed. In general, the procedures involve the presentation of feedback of their behavior to the student with the goal of helping the student to understand and improve their behavior.

In Deshler's strategy, the student is taught to verbalize the instructions aloud, and finally the student performs the task while verbalizing the instructions. The effectiveness of this strategy has been shown to be effective in teaching students to self-monitor their own behavior. The student is taught to verbalize their own behavior and the feedback of their behavior to the student with the goal of helping the student to understand and improve their behavior.

In Hallahan's strategy, the student is taught to verbalize the instructions aloud, and finally the student performs the task while verbalizing the instructions. The effectiveness of this strategy has been shown to be effective in teaching students to self-monitor their own behavior. The student is taught to verbalize their own behavior and the feedback of their behavior to the student with the goal of helping the student to understand and improve their behavior.

Pretask Requests - 1987, there is a need for nonverbal techniques in managing severe behavior disorders. These procedures must be acceptable in integrated community settings and be referred to against normal standards of managing the behavior of nonhandicapped persons. One of these techniques is pretask requests which has had promising results in applied settings.

References


Continued from Page 2

Specific vs. General

Specific educators have not addressed the specific general in those terms, therefore, this discussion will be most relevant to CMB-DI distinctions. It should be mentioned, however, that the holistic strategies have not designed any specific instructional techniques, materials, or curricula. Instead, they rely on the language environment (Stollmeier, 1984) and the use of learning and they have advocated unstructured learning in the type purported to be consistent with Piagetian theory. The holistic uses language environments to foster discovery by the learner, and motivation driven towards interest and/ or meaningfulness.

Generic vs. Specific

Generic educators have not addressed the specific general in those terms, therefore, this discussion will be most relevant to CMB-DI distinctions. It should be mentioned, however, that the holistic strategies have not designed any specific instructional techniques, materials, or curricula. Instead, they rely on the language environment (Stollmeier, 1984) and the use of learning and they have advocated unstructured learning in the type purported to be consistent with Piagetian theory. The holistic uses language environments to foster discovery by the learner, and motivation driven towards interest and/ or meaningfulness.

A major purpose of general strategies is to enable the student to assess a problem situation, develop a specific strategy for solving that problem specific strategy for its solution. The general strategy can be thought of as the mechanism that brings about the solution. The specific strategy can be thought of as the "engine" whereas the specific strategies are the "wheels" that enable the student to solve a problem (p.36). The general "What's my problem?" is the specific strategy in an executive strategy that can lead to a solution only if the learner has already acquired a repertoire of specific strategies from which to choose. The learning strategies taught by Deshler, et al. (1983) are those that are more specific to an individual than the specific strategies taught by Deshler, et al. (1983). The specific strategies taught by Deshler, et al. (1983) are those that are more specific to an individual than the specific strategies taught by Deshler, et al. (1983). The specific strategies taught by Deshler, et al. (1983) are those that are more specific to an individual than the specific strategies taught by Deshler, et al. (1983).

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DIRECT INSTRUCTION NEWS, Winter, 1988
DI Gains in Big Piney Middle School Basic Skills Class

by Janita Summers
Big Piney, Wyoming

The Big Piney Middle School in Big Piney, Wyoming implemented a basic skills program in 1985-86. A class for reading and math was developed along with a special class for grades six, seven, and eight. The second year, a language class for seventh graders was implemented along with the reading, math, and spelling classes. The third year, there were only classes in reading and math for sixth, seventh, and eighth graders. The basic skills classes were designed to help students who were having difficulty in the regular classroom, but were not qualified for placement in the resource room. This classroom was also to be used as one alternative before a student was referred for testing and placement in the resource room. However, if students were placed in the resource room, they were not to be placed in the basic skills classes except in very special cases.

A student participated in the basic skills program only if he or she met the placement criteria. All the children were given the Gates-MacGinitie Reading Test and the Stanford Mathematics Test when they entered the middle school. If a student scored below the 50th percentile, and the classroom teacher felt he or she was having difficulty in class, the student’s achievement scores and last class grade were then evaluated. If the student was below the 50th percentile on the standard achievement test, and he or she had a D or F for his or her last class grade, the parents were then consulted. If the regular classroom teacher, the basic skills teacher, and the parents were in agreement, the student was placed in the basic skills class.

Following the recommendation procedures, the students were diagnostically tested and placed in the appropriate Direct Instruction program. The Corrective Reading Program (Decoding) was the core of the basic reading class. The Corrective Math programs were used along with the regular classroom book, Heath Mathematics, Expressive Writing was used in the basic language class. Warren’s English Grammar and Composition textbook was also used along with the DLM Growth in Grammar workbooks for the parts of speech. For the spelling class, the Corrective Spelling Through Morphographs program was used.

Each basic skills class contained 5 to 10 students and was blocked near the regular classroom, corresponding class so that the students could be moved as needed. In these classes, the students learned the skills they did not know, and they were then placed successfully back in the regular classroom.

Results

The Direct Instruction material has been very effective in our school. Over 70% of the students have gained 12 months in an 8 month period through their participation in the basic skills program. Plus, some of the students even gained over two years in this amount of time. Conclusively, this basic skills program has been very successful and a productive addition to the Big Piney Middle School.

The results of the basic skills program at the Big Piney Middle School are listed in Table 1. The type of Direct Instruction program along with the testing instrument are listed with each set of results. The grade-equivalent scores listed for each student, except for the Test of Written Language, where standard scores (like I.Q., scores with a mean of 100 and a standard deviation of 15) are reported. On the Test of Written Language, no change (zero gain) would represent a year’s gain in grade-equivalent scores.

The gains for the second year of the program (1986-87) appear to be much greater than those for the first year of the program (1985-86).

Table 1. (continued)

<table>
<thead>
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<td>X</td>
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Grade-Equivalent Gains on the Key Diagnostic Test using Corrective Math.

Students | Months in Program | 1985-86 | 1986-87 |
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Grade-Equivalent Gains in Spelling on the Kaufman Test of Educational Achievement using Corrective Spelling Through Morphographs.

Students | Months in Program | 1985-86 | 1986-87 |
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Standard Score Gains on the Test of Written Language using Expressive Writing.

Students | Months in Program | 1985-86 | 1986-87 |
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Cognitive Behavior Mod., DI, and Holistics — Continued from Page 3

vision problems, for example, she must now the steps involved in long division, which parts of the problem to attend to in each step, and so forth. Specific instructions in how to solve long division problems may be described from a traditional perspective, as instruction in how to say the problem. This increased emphasis on the teaching of specific academic strategies is also consistent with current thinking within the mainstream of educational psychology.

The growing body of evidence in support of the role of domain-specific knowledge in skilled performance and performance in reading that rely almost exclusively on abstract, all-purpose strategies and skills (Winer & Wiersma, 1984, p. 231).

These changes (in the child's reasoning and learning abilities) come about with the acquisition of specific knowledge, and those teaching the lowest-ability students that enable different kinds of thinking (Glaser, 1984, p. 97).

In short, the view that specific knowledge (the component of specific skills and strategies) is prerequisite to the development of higher levels, more abstract thinking is now widely accepted (e.g., in the work of Bruner, 1960), which relates to direct teaching in the higher level strategies as well as the more specific skills and strategies. This is a question of particular relevance to the study of learning disabilities, one of which I will return in the final discussion section of this paper.

Bottom-up vs. Top-down

Describe bottom-up vs. top-down approaches has contributed to the teaching of reading. Because the DI and holistic advocates have been more directly involved in reading instruction, this debate has more relevance to those two approaches than to the CMB approach.

The bottom-up vs. top-down distinction is closely related to the part-whole distinction. In terms of teaching instruction, this part-whole distinction relates to bottom-up vs. top-down approaches to the acquisition of reading. There are many component parts (i.e., skills and strategies) and top-down approaches in which the whole of a reading (i.e., getting meaning) is not broken down into parts. Getting meaning from the print is the goal of both bottom-up and top-down approaches; however, the means by which they teach is different and can be very different.

The DI model of reading depicts reading as consisting of two major components: decoding and comprehension. Both decoding and comprehension are further subdivided into numerous subcomponents. Decoding accuracy and speed are precursors to the acquisition of comprehension; thus, instruction begins with specific decoding skills (e.g., letter-sound associations and strategies (e.g., a sound scheme that predicts the pronunciation of a word) are taught separately and are taught separately; these skills are highly structured, specific, and dependent on the level of decoding skills and strategies (Carline & Silbert, 1979). That is to say that getting meaning is the whole of reading and that an attempt to break that whole down into parts will simply destroy the essence of the whole. That is, the language experience approach adopted by the holisticists, getting meaning is emphasized from the beginning of reading instruction and mastering the components of reading materials is only by having the students construct their own stories. Because the meaning of unbroken words is thought to interfere with the students' understanding of the text, the teaching of phonics and corrective feedback for decoding errors are opposed in early reading instruction (Smith, 1983).

Although DI is appropriately identified as a bottom-up approach, it differs from other more behaviorally oriented bottom-up approaches (e.g., precision teaching, direct instruction, (1973) taken misdirectionary paradigms) in some important respects and it is similar to the holistic approach in other respects. Most relevant the dispositional design of DI is concern for the "whole" of reading in contrast to the behaviorists' focus on isolated skills (Kaidin, 1981). This distinction is reflected in DI's development of curricula that is comprised of a multitude of reading skills and strategies, in contrast to the behaviorists' development of techniques and procedures for teaching reading. DI argues that this is not to say that behavioral tech- niques are not important components of the DI programs; they are. However, this instructional domain is only one of the many analyses involved in the DI approach. To understand DI's concern for the whole as well as the parts of any academic domain, it is necessary to understand the parts of the other two analyses — the knowledge systems analysis and the communication (stimuli) analysis.

The knowledge systems analysis is conducted for the purpose of identifying sameness across seemingly disparate bits of knowledge within the domain. The identification of the common sameness across different problems within a domain is essential to the organization of problems into sets (cf. classificatory and subcategorization) and the acquisition of general strategies that will be generalizable to all examples within any given set. The communications (stimuli) analysis is conducted to determine ways of communicating those samenesses and generalizability strategies to the learner in a fairly seamless manner. Falsehood communications and the acquisition of verbal and nonverbal cues and contexts (and therefore proven over- and under-generalization) and the acquisition of the intoned rules and concepts (and therefore assumed appropriate generalization). The knowledge systems and communications analyses together have been referred to as a "logical analysis" or a "structural analysis." It is important to note that the logical analysis involves not only the breaking down of knowledge into components, but the identification of general principles (i.e., as samenesses and non-samenesses) among the parts. After the knowledge system and stimuli analyses have been conducted, the behavior analysis comes into play for the purpose of assessing or evaluating the effectiveness of the teaching formats derived from the analysis. (Bruck, 1982; Carline & Silbert, 1982; Smith, 1983). However, that generalizable and efficient learning cannot result from behavior analysis alone; the behavior analysis must precede by the logical analysis. DI's concern for the whole of reading can be further illustrated by the way in which the complexity of the component is varied and the form larger and larger wholes. In the comprehen-
of the use of general metacognitive strategies may be no more effective than training in the use of general cognitive strategies. If CVM programs are designed to produce students who are to become more successful at achieving new academic learning and/or generalization, it seems likely that changes in students' metacognitive strategies will be a necessary condition for such performance.

The methods of research involved in the CVM study were essentially the same as those of previous CVM studies. Students were randomly assigned to experimental and control groups, and each student was given a pretest to assess their current level of metacognitive strategies. The experimental group received training in the use of general metacognitive strategies, while the control group received no such training. Following the training, all students were given a posttest to assess their metacognitive strategies. The results of the posttest were then compared to the results of the pretest to determine the effectiveness of the training.

The results of the CVM study indicated that students who received training in the use of general metacognitive strategies showed a significant increase in their metacognitive strategies, while students who received no training showed no such increase. This suggests that training in the use of general metacognitive strategies can be an effective way to improve students' metacognitive strategies.
Continued from Page 5

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Direct Instruction in Kindergarten Part 1: The Model and the Curriculum

by Douglas Carnine
Jodi Carnine
Ron Weisinger

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In the United States, the proportion of our children living in poverty in the 1980's is the highest since 1967. A child's socio-economic status weighs heavily on quality of the education she or he receives in the U.S. Former Secretary of Education Terrel Bell, recently claimed that, "The school reform movement has benefited about 8 percent of our students, but has had no significant impact on the other 30 percent. . . . The 30 percent are the lowest-achieving students, and we are still not effectively educating them."
The cycle of failure begins early for these students. We know, for example, that 82 percent of the fourth graders scoring in the bottom quartile on standardized tests will never graduate from high school.

Yet, schools need not be powerless in bending the law of increasingly poor and troubled students. The intervention I will describe begins with five-year-olds, when most public schools begin teaching children. This intervention, called Direct Instruction, focuses on building students' academic competence. It's rationale is fairly simple and straightforward. Many five-year-olds from low-income backgrounds enter school with far fewer academic skills and concepts than their more advantaged peers. Defining academic instruction for disadvantaged students, because they are not "ready," will only widen the gap. Narrowing this gap requires early, intensive intervention.

This intervention requires teachers to address the students' skills and knowledge and begin instruction at the children's level. Many children will have had no preschool experience and will be unfamiliar with many of the skills from schedules and activities. These children would not receive Direct Instruction during the first few weeks of instruction in oral language. Similarly, non-English and language delayed students would begin with just oral language instruction. Others will enter with the requisite skills for more sophisticated cell language tasks as well as for reading instruction.

Careful assessment is intended to take into account each individual's needs, including developmental maturity. Individual needs are not only met in initial placement but also in the rate at which children progress through the instructional programs. Ability groups allow students to progress more closely to their optimal rates. Group composition changes as the children's learning rates change.

The Kindergarten Child

Most preschool programs for four-year-olds are child-centered. Children are not only given decision power in their immediate surroundings, but also experience virtually complete acceptance of their responses. A picture of scissors is acknowledged for its pretty color, the jangle of toy cymbals for the making of music. Working with others to cut figures and paste them together is cooperative problem solving. Major goals are participation, cooperation, and expression. Consequently, the child explores more, participates more, expresses more and develops trust, self-confidence, and expression by the children are no longer enough. A much narrower range of responses is acceptable. Reading the sentence "The children will not call a six, nine.

The transition from preschool (as a four-year-old) to first grade (as a six-year-old) is great. Educators who vary in their beliefs about what should happen during this kindergart
d transition many would like to be more child centered like preschool folk; some advocate a content-centered approach. The replication may be less crucial for children from middle class families than for children from low income backgrounds. Without a well-orchestrated transition from a child-centered to a content-centered environment, many of these children will not be successful in first grade and will all too soon fall into the ominous fourth quartile.

While kindergarten children need familiar activities, they must also experience success with content-centered activities. Although this kindergarten day is often no more than 200 minutes, both types of activities can be scheduled. In our experience, the difficult task is planning and implementing the content-centered activities so that students from a low-income background will succeed, and will enjoy themselves, producing competent and confident children.

A Typical Direct Instruction Kindergarten Program

Though Direct Instruction kindergartens are similar to traditional kindergarten programs in many respects, there are several important differences. Children learn language arts and mathematics in groups of 6 to 12. Their teacher explains, demonstrates, and asks questions for 15 to 20 minutes in each subject area. The children write, answer questions and ask questions themselves. The small group lesson is composed of short segments, each segment focusing on a specific skill or combination of previously-taught skills. These short segments clearly approximate the intensity span of kindergarten children, capturing their interest through fast moving and interesting learning activities. Frequency: teacher-pupil verbal interactions with many groups and races provide students with the child feels with a great deal of active involvement and high engagement rates—about ten responses per minute with about 80 to 90 percent rate of correct responding. The text is a paraprofessional text the small group lessons, running two groups concurrently while a third group of children are independent at a learning or activity station.

Actual Direct Instruction with groups of children could take as little as one hour a day. The remaining kindergarten activities are often the same as those found in a typical kindergarten classroom. Children are assigned to various activities or centers with free choice. They choose from among a variety of child-centered activities such as building with blocks, looking at books, and playing with a doll house, and by water table or computers. A five-minute and manipulatives table would be equipped with puzzles, crayons, clay, and so forth. The remainder of the daily schedule includes other typical kindergarten activities such as music, art, health, social studies, science, gross motor activities, snack, and indoor or outdoor play. Direct Instruction is part of a complete kindergarten program. Its role is most crucial for children who are likely to have difficulty with academic instruction.

Direct Instruction Curricula Context

The academic content of a Direct Instruction kindergarten program falls into two main areas: language arts and mathematics. The language arts area, at least 80 percent of instructional time is devoted to oral language instruction and practice that focuses on vocabulary, concept development, syntax, and logical thinking. Important instructional words and concepts such as and, or, same and different, comparatives, superlatives and inferentials are systematically introduced and taught. The vocabulary component deals with the general knowledge concepts of time, space, location, classification, part-whole relationships, occupations, colors, shapes and patterns are also taught. Concept application activities synthesize earlier taught instructional goals. For example, multiple attributes, inferences, and knowledge of patterns are integrated in this Direct Instruction language activity. Students are shown three boxes:
The teacher states that the package with a ribbon and polka dot wrapping paper has pain... The teacher asks, "When I get..." The teacher asks, "Does this package have pain in it? Why did you give that answer? For the first package, the student would answer..." maybe... "Doesn't it have polka dot wrapping paper?"

The other half of language arts instruction entails actual reading instruction. The reading curriculum begins with brief segments, discrete reading subskills such as sound-symbol identification, blending, orally segmenting words, visual discrimination, rhyming, and word reading. For the most part, however, reading instruction is holistic in nature. Within 4 weeks students have acquired a few sound-symbols correspondence and blending strategies; they are then given meaningful words to read in context. Although the subskills of the decoding process are taught in each lesson, an increasing amount of the student's time is spent using these skills to determine the meaning of words in context. Initially, students read words and sentences for fluency and oral expression. The children are encouraged to take their reading books home and read them to their families.

The stories are written with meaningful vocabulary yet controlled for regulation, to provide the students the opportunity to practice the sounds the students have been taught. The number of regular words in the stories is kept to a minimum, to reduce confusions about sound/symbol relationships. Reading a wider range of stories, including ones the children write themselves, is put off until later in the year.

Probably the biggest difference between the Direct Instruction and traditional kindergarten readiness program is the way in which students learn sound symbol relationships. Direct Instruction teacher sound/symbol correspondences directly. The students learn, for example, that the sound "nonsense" is represented by the symbol. The letters are not introduced in alphabetical order, but rather children need to absorb the whole word to get the words for the student to read. In addition letters that are likely to be confused are separated. For example, b and d, which are often stuck together in the alphabet and cause most initial readers considerable confusion, are separated by many lessons, which reduces these confusions (Carnine, 1981).

Another difference is the way in which new letters are introduced and practiced. The new letter is introduced on one day and then practiced until it is mastered, which usually takes no more than three days. (Although this rate of introduction is slower than in any other reading program, a faster rate would overwhelm many kindergarten students. Faster-learning kindergarten students would be together in a group and spend possibly only one day on each new sound.) Each previously introduced sound is also reviewed, in sound/symbol correspondence books and in word reading tasks in each lesson.

The distinctive characteristic of the math curriculum is that students practice a wide variety of math facts through counting and positive activities. There is a math lesson for every day during the last four weeks of the year, students count pennies, clamps, and pictures of various objects, identify numerals, write numerals, record the numbers and associate symbols. In the spring of the kindergarten year, students learn specific steps to solve addition and subtraction equations, translate orally presented story problems into simple equations, and derive unknown facts from familiar facts. As is the case for the reading instructional program, the mathematics program has provisions for moving students through the material as a flat enough curve so that they master the concept. This thoroughness is not characteristic of other mathematics programs.

Curriculum Design

Direct Instruction curriculum materials (Mastery Reading, Mastery Spelling, Dolch Words) are designed to engage the teacher and students in frequent exchanges. A crucial aspect of curriculum design is specifying the explanations and questions teachers will use. As Lee Shulman recently noted ("Conversations from Wingpread", on PBS):

To give you an advantage to take the context they're teaching and find the ex-
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samples, the analogies, the demonstrations, the metaphors and the comprehensives that will bring along with whatever other methods. This is something you cannot do without having a very deep and rich understanding of teaching methods.

As paradoxical as it may sound, a deep and rich understanding of how to teach a subject requires an awareness of what students typically misunderstand in the subject. For example, in beginning arithmetic, students will often write 8 as the answer to this misspelled addition problem: 3 + 1 = 5. This error is common because in all previous problems, such as 3 + 1 = 4 and 4 + 1 = 5, students add the two numbers and write the answer in the box. 3 + 4 = 7 [equal], but 3 + 8 [does not equal] 5. The causes of the error is a lack of understanding of the concept of equality. Students do not understand that the equal sign means off two sides, both of which must have the same value. The sides must "balance."

Being aware of this potential misunderstanding, a well-designed curriculum takes a proactive stance. So, in teaching simple addition, such as 3 + 5 = 8, the students are required to circle or shade the box that tells how many: 3 + 5 = 8. Then they use "counters" in following these steps:

1. Make 3 lines for 3 and 5 more lines to show plus 5.
2. Count all 8 lines.
3. Indicate that they counted 8 on the side with 3 + 5, so they must count 8 on the side with the box (this is the equality rule).
4. Write 8 in the box.

Note that each of these steps is taught as an independent skill before students overreassurance an addition problem. Automaticity on component skills facilitates integration of the components into a more complex skill (Kame'enui & Cahan, 1986).

Once students become facile at simple addition problems, they are introduced to missing addends problems: 3 + ? = 5. The skill of circling the 5, the side that tells "how many," highlights that the students already know the number for one side of the equation. This concept is reinforced by writing the box that doesn't tell how many, so 3 + 5 can't be the side that tells how many.

Also, students circle the side with 3 + 5 = 8; they are asked to apply the equality rule: "Count 5 on this side, so I must count 3 on the side with plus box." The teacher points out that there are already 3 on that side, so the students must count from 3 until they reach 5. Each time they count, they make a mark under the box: "Four," "five"

The two marks under the box indicate that two have been added, so the students write 2 in the box.

Student mastery of missing addend addition grows out of the curriculum's anticipatory teaching and early misunderstandings. This anticipation leads to preventive measures, which are built into the teaching of simple addition. Moreover, the steps in simple addition: circle the side with "how many," write 8 in the box, and they play the same component skills, further easing the transition to missing addend problems. In fact, the curriculum's design exemplifies this principle: missing addend and missing subtrahend subtraction problems as well.

Simple Subtraction

7 - 3 = 4
1. Student circles side that tells how many.
2. Student makes mark for the first number.
3. Student makes a mark that the number is removed.
4. Student counts four remaining marks on side with 7 and makes same number of marks on side with box.
5. Student writes 4 in box.

Missing Subtrahend Subtraction

1 - ? = 4
1. Student circles side that tells number being removed.
2. Student makes 4 marks for first number.
3. Student counts 4 marks that must be counted on the side with 1.
4. Student makes a mark that the number is removed.
5. Student counts how many marks were minus and writes the number in the box.

Simple Division

24 = 6 x 4
1. Student divides 24 into 6 equal groups.
2. Student counts how many in each group.
3. Student writes the answer.

The other aspects of effective time utilization are familiar: Scheduling enough time for academic instruction (while still allowing for play and so forth), minimizing interruptions, employing motivation techniques to keep students on task, and eating wasted time in transitions.

Assessment

Assessments of achievement are important in planning and implementing Direct Instruction in kindergarten. The first is to do with identifying children who are in particular need of intensive academic instruction. The second is on-going monitoring of how students are learning during kindergarten, an early warning system for students who are not learning successfully or at an acceptable rate.

Identifying eligible students. The process begins during the traditionally at-risk five-year-olds is about as reliable as identifying gifted five-year-olds. It can be done only with a large margin of error. Some children from low income backgrounds, although not exposed to books, papers and writing implements at home, are quite bright and will quickly learn academic skills. Yet, they may do quite poorly on standardized tests. Nonetheless, there are indicators that are reasonable predictors of later success in school.

A number of specific norm-referenced inventory tests are used for identifying at-risk children. First, kindergarten are available. Measures such as the Preschool Screening Survey (Jussim & Hackett, 1980), Cooperative Pre-School Inventory (Caldwell, 1971) and the Boehm Test of Basic Concepts (Boehm, 1971) provide valuable information for determining which kindergarten children might need a more systematic instructional program.

Informal assessments of student's academic performance. Identification, knowledge of occlusion and object counting, matching letters, and holding a pencil and copying letters. All of these tasks should be also be used by the kindergarten teacher. The best predictors of kindergarten success are those which closely match the tasks of the objectives that children are likely to do in school. (Anderson, 1973). This statistic is of some use: The average kindergarten child knows 13 letters of the alphabet upon entry to school (Anderson, et al., 1980). Therefore, students who can identify six or fewer letters may need extensive work early on. Especially important are coordinations of students who have difficulty matching letters. Most kindergarten children can also identify at least five or six numerals. Those who have difficulty matching letters or fewer numerals may need to be identified for intensive instruction. Certainly children who have difficulty holding a pencil, writing of identifying the letters in their names must be considered.

A simple, yet important type of oral language that can be identified at risk students is verbalization, students who are not able to carry on a conversation about "I go to the store to buy bread, butter and milk," and asked to say the entire sentence exactly as the examiner said it. Those children who are not able to repeat the statement may be particularly good candidates for Direct Instruction.

Criterion-referenced tests to monitor student (and teacher) performance are built into (or are available for) each Direct Instruction program. Items on these criterion-referenced measures are designed to correspond to specific instructional tasks to that remedial instruction is built into the program. On specific classes of items can be easily utilized to define areas where additional instruction is required. Administrators can utilize the results of the test to assess their students and then identify areas in which there may be weak in the instruction being provided.

In addition to criterion-referenced tests, test items on content instruction are designed to test students on content tests. Content coverage is tipical measured in terms of tests, in which it is expected that a high-ability group will cover an average of about 1.2 to 1.5 lessons per day and the lowest group is expected to cover, on the average, at least 7 lessons per day. If groups are progressing at a slower than expected rate, the teacher evaluates the time is being used in the classroom. Change in scheduling to increase the amount of instructional time and work on behavior management techniques to improve the use of instructional time are two frequent remedies for problems with content coverage.
Direct Instruction in Kindergarten Part 2: Research Findings

By Douglas Carnine* inda Carnie and Weirberg

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Research on Direct Instruction

A Direct Instruction Kindergarten is not unique to many early childhood educators, because of its content-centered orientation. It's a big change, though, in the effect of such programs on young children. As often is the case, educators would like to be able to turn to research findings for guidance. This task is not easy; to do the ideal research would require an elaborate and costly model having

- a sufficiently large number of students, both control and experimental;
- b. a long-term and intensive analysis conducted by outsiders;
- c. a representative research setting;
- d. representative students;
- e. reasonably objective and reliable test scores for major conclusions;
- f. random assignment of students to instructional programs. Research on school-based programs rarely meets all the criteria. The investigator is forced to weigh findings within the context of the adequacy of the re-

search. Such judgmental judgments are clearly needed in looking at research on early childhood education. For example, almost all the recent attention to Direct Instruction in kindergarten stems from David Weikart and colleagues' research reports (e.g., Schweinhart, Weikart, & Lanner, 1985). It is many reasons to hesitate in interpreting their findings, even though they were able to randomly assign students to treatment.

Only a very small number of students, about a dozen, completed both years of the Direct Instruction preschool program. The Direct Instruction preschool program was administered by Weikart and carried out by teachers he hired. His staff collected and analyzed the data.

The research setting was his lab school located at the headquarters of his foundation. The major conclusions were based on self-report data, not by objective measures.

Finally, Weikart's data are only for three- and four-year-old children. His results do not address the educational potential of younger children and therefore have no direct implications for kindergarten.

In short, national policy about organizing kindergartens should not be based on laboratory school research with self-report data conducted by program developers on about a dozen children who received Direct Instruction when they were three- and four-year-olds.

Findings from Independent Researchers

There are research findings where students were five-years old in public schools, where thousands of students were involved, where students were taught in many public schools across the United States, where findings were based on more objective, more reliable test scores, which were collected by an outside, independent agency. A quite different set of implications for organizing kindergartens emerge from these data.

The National Follow Through Project included a large study of 13 different approaches to teaching economic disadvantaged students in kindergarten through third grade. At the project's peak, 75,000 low-income children, from 170 communities participated each year. A wide range of low-income communities were represented.

The evaluation of Follow Through was conducted by two impartial, independent agencies. The basic data for the Follow Through Evaluation were collected by Stanford Research Institute and analyzed by AIT Associates (Siebeneck, 1978; Siebeneck, Propper, Anderson & Carew, 1977). A critique of the AIT findings (House, Glass, McLeant, and Walker, 1978) and rebuttals by several groups were published in the same issue of the Harvard Educational Review. (See also Borko & Kurland, 1981-82.) Many points of the House et al. (1978) critique are valid, particularly those citing limitations of research designs whose students are randomly assigned to the experimental or control groups. However, the major findings of the national evaluation of Follow Through programs remain valid: these expectations for shortcomings, in part, because of the consistency of the Findings over time and across different school districts. These findings indicate very different effects for the Direct Instruction and Weikart High Scope Programs for kindergarten students from low-income backgrounds.

Results: Normative performance. A major objective of the Direct Instruction Follow Through Programs was to help achieve normative performance for disadvantaged primary-grade students up to the national average. The AIT Reports (Siebeneck, 1978; Siebe-
exteck, Propper, Anderson & Carew, 1977) provided average scores by school(s) and by sponsor for four Metropolitan Achievement Test measures: Reading Total, Total Math, Spelling, and Language. The average of means for the Direct Instruction sites (converted to percentiles) for students entering in kindergarten are presented in Figure 1. Figure 2 indicates that students in Direct Instruction from kindergarten through third grade are close to or at national norms on all measures. These positive findings were supported from interviews with parents of Direct Instruction students and parents of students from other approaches. Parents of Direct Instruction students report that their children had learned more than did parents of students in other instructional approaches (Haney, 1977).

A second objective as Follow Through was to determine whether some Instruction methods were more effective than others. Each approach had the same amount of additional funding each year; each was asked to help each school implement its approach. As shown in Figure 2, the differences between the Direct Instruction and the Weikart methods was substantial in all four areas—1 2

*Continued on Page 10
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...previous research had found no outcome differences for programs lasting 1 year versus programs lasting 2 years and extensive preliminary analysis of the data revealed no indication of program-donation effects in this study." (p. 22, Swenstein, et al., 1986)

Simper interventions with Weikart's High Scope program may in fact be better than longer interventions.

Findings from Direct Instruction Researchers

The follow-up results for Direct Instruction and for Weikart's High Scope program are for third-grade students who entered school in kindergarten. The data provide information on the comprehensive K-3 intervention, but little information about the relative contribution of the kindergarten year. Partial answers to these questions come from data gathered by the Direct Instruction Model itself.

The first data are from comparisons of students who entered Direct Instruction during the kindergarten year with those who entered the program in first grade. Third-grade students entered the Direct Instruction program and spent four years in Direct Instruction scored significantly higher on achievement tests than students who entered school in first grade (Bosker & Epstein, 1984). Also, Direct Instruction students who entered in kindergarten with IQ scores below 71 gained an average of 17 IQ points by the end of third grade. Students who entered school in first grade had an average gain of 9 IQ points.

These data include corrections for regression artifact. For students with IQ scores between 71 and 90, the respective gains were 16 for kindergarten entering students and 9 for first-grade entering students (Gerson, Becker, Harry, & White, 1984). While these data suggest a powerful effect from kindergarten, they are not as conclusive as they might seem. The kindergarten and first-grade entering students were from different school districts, which is a serious confound.

This confound was avoided in one school district, which started a kindergarten program after having initially had the Direct Instruction program begin at first-grade (Gerson, Durham & Gisler, in press). This situation permitted comparisons within the same district of students who had Direct Instruction in kindergarten with students who began Direct Instruction in first grade. The upper-left corner of Table 1 compares end-of-third-grade percentiles for Direct Instruction students who began Direct Instruction in kindergarten (four years of intervention) with students who began in first grade (three years of intervention). The differences are substantial in all cases. The lower-left quarter of Table 1 makes the same comparisons at the end of the third grade. The advantages of beginning Direct Instruction in kindergarten are still evident at the end of third grade even though the students were in traditional programs for six years.

The right side of Table 1 lists the scores for the comparison students who were in school from kindergarten through third grade or first grade through third grade. The p values in parentheses indicate significant differences between Direct Instruction and comparison students. Also, Direct Instruction students who entered the program in kindergarten scored at the 50th percent.
Table 1. Percentile Scores for Direct Instruction and Comparison Students Who Entered in First Grade and Entered in Kindergarten at the end of Third Grade and Ninth Grade.

<table>
<thead>
<tr>
<th>Kindergarten</th>
<th>Direct Instruction</th>
<th>Comparison Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entering</td>
<td>(N=98)</td>
<td>(N=445)</td>
</tr>
<tr>
<td>First Grade</td>
<td>Entering</td>
<td>(N=45)</td>
</tr>
<tr>
<td>End of 3rd</td>
<td>43</td>
<td>28</td>
</tr>
<tr>
<td>Reading</td>
<td>56</td>
<td>37</td>
</tr>
<tr>
<td>Math</td>
<td>68</td>
<td>52</td>
</tr>
<tr>
<td>Language</td>
<td>56</td>
<td>52</td>
</tr>
<tr>
<td>End of 9th</td>
<td>49</td>
<td>23</td>
</tr>
<tr>
<td>Reading</td>
<td>59</td>
<td>26</td>
</tr>
<tr>
<td>Math</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Language</td>
<td>29</td>
<td>19</td>
</tr>
</tbody>
</table>

Note: (01) or (03) indicate significant difference between Direct Instruction and comparison students. All significant differences favor the Direct Instruction students.

The table and the accompanying text discuss the results of a study comparing Direct Instruction students to comparison students who entered kindergarten at the end of third grade and ninth grade. The study found that Direct Instruction students had higher reading, math, and language scores compared to the comparison students, indicating a significant advantage for Direct Instruction students.

The research is supported by references to previous studies, indicating a strong body of evidence for the effectiveness of Direct Instruction in improving academic outcomes. The study concludes that Direct Instruction is an effective approach to early childhood education, particularly for students who need additional support in reading and language development.

References:
Language Experience Research—Continued from Page 1

Readiness vs. Beginning Reading
When Language Experience was used in kindergarten (or in 2 cases in first grade) at a cadet program (prior to another beginning reading approach), 10 comparisons avoided Language Experience. 2 favored basal, and 8 were non-significant. In first grade studies where Language Experience was the primary approach, 11 comparisons favored basal approaches, 8 favored Language Experience, and 28 were non-significant. In all grade differences were significant and imply that Language Experience may be more useful as a "readiness" program. A similar comparison was not possible with the meta-analysis studies because of their small number and the use of different measures (genus concept measures as opposed to reading performance measures).

Recognition vs. Comprehension
The Language Experience Groups showed better effect sizes for word recognition measures than comprehension measures (mean effect size = 0.35 for 18 non-USEO studies, 0.20 vs. 0.42 for non-USEO studies). The effects favor Language Experience Groups for word recognition and basal Groups for comprehension, but both are moderately large. The difference for type of measure is statistically significant for the non-USEO group.

Older vs. Newer Studies
Grudin (1983) has implied that Language Experience approaches have become more effective over time. To test this, we conducted a meta-analysis of effective USEO and non-USEO studies. (Since most of the USEO studies were done at the same time in the late 1960's, they could not be readily contribut-

Discussion
The findings suggest that Language Experience approaches are more effective when used in kindergarten instead of a typical "reading readiness" program and seem to have greater effects on measures of word recognition than on measures or comprehen-

Duran (1979) suggests that, prior to formal reading instruction, children need to learn oral lan-

guage, concepts about print, and expectations about reading—skills that Language Experience approaches develop. Girls also need to learn to decode print. The later appears to be best accomplished through direct instruction of sound-sound correspondence, rather than through approaches such as Language Experience (see Anderson et al., 1983).

Reading (1979) also suggests three phases in learning to read: (1) a phonetic phase where the child becomes aware of the tasks involved, (2) a mastering phase where skills are practiced, and (3) an automaticity phase where practice leads to performance in a "chopstick" without conscious attention. Language Experience may be more effective in the "automatic" phase by showing how written words relate to spoken words and provide for disadvantaged children the incidental learning about books that goes on in middle-class families. In the mastering phase, a more systematic approach to decoding than Language Experience may be needed. The data reviewed support the value of more systematic code-embossed approaches in the mastering phase.

Some in the Language Experience approaches reviewed it is possible that stu-

dents actually spent less time reading and more time talking about what they were reading or write. Harris and Serrier's (1966) observations of Language Experience and Basal programs found that children in Basal programs spent more time reading and this was directly related to reading achievement. Time spent reading was negatively correlated with achievement. This latter finding has been replicated by a number of researchers (see review by Berliner, 1981).

The study, the question should not be whether Language Experience approaches are effective, but when effective, what are they effective for? It could be that the philosophy behind Language Experience—that the function of reading is to communicate—needs to be taught by children early, but that once learned, children need direct practice in decoding written language themly and ar-

References

nations.

Anderson, R.C., Hinson, B., Stahl, J., & Wilkerson, L.C. (1983). Becoming a Master Reader: Chal-

lege, Ill. Center for the Study of Reading and National Association of Edu-

The Second Yakima Direct Instruction Conference
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DSTAR Language I & II • Jean Ostorn
DSTAR Arithmetic I & II • Paul McKinney
Managing the Full Range of Behavior Problems (continued) • Geoff Colin

Institute Schedule:

Monday, June 27, 1988
8:30-9:45 Institute Registration
9:00-9:50 Institute Opening
9:20-9:45 Coffee Break
9:45-10:00 "A" Sessions Meet
10:00-1:00 Get-Acquainted Lunch (included in fee)
1:00-3:00 "B" Sessions Meet

Tuesday, June 28, 1988
8:30-12:00 "A" Sessions Meet
12:00-1:00 Lunch (on own)
1:00-3:00 "B" Sessions Meet

Wednesday, June 29, 1988
8:30-12:00 "A" Sessions Conclude
12:00-1:00 Lunch (on own)
1:00-2:00 "B" Sessions Conclude

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