Committed Teaching on the Plains

Agriculture, Energy, and Educational Excellence

Kathleen Howman
Center (ND) Public Schools

Editor's Note. On occasion, the News will profile Direct Instruction implementations in diverse locations. In this issue, we are pleased to announce that DI efforts underway in Center, N.D. If you would like to see the people in your area get recognition for their commitment to educational quality through Direct Instruction, please let us know. Your project could be one of the next ones profiled.

If asked to state what North Dakota is known for, most Americans would probably say agriculture. Those aware of recent resource discoveries would quickly add energy as a state asset. But only a select few would be able to tell you the new wave of North Dakota's notoriety: educational excellence. That's right, educational excellence. It might not have pervaded the entire State yet, but if you go to Center, the heart of North Dakota, that's exactly what you'll find. Many people in Center would tell you that educational quality is their most recent claim to fame. So would the folks in Bismarck, the State capital. State legislators, government officials, members of the media—they've all been to Center; they've seen what's going on. And they don't mind telling you it's mighty impressive. Neither do local school officials mind telling you that what's going on in Direct Instruction.

Center is a small community in central North Dakota. It is one of the few school systems with 460 students in grades 1-12. Most of the population is of German or Norwegian descent. About 4 percent are Native American. Most families in the area make their livings from energy (coal) or farming. They work hard, pay good money to support the local schools, and like effective educational programs. And that's just what they're getting, thanks to the school's commitment to Direct Instruction.

DI: Center of Attention

Direct Instruction (DI) programs have been used in Center Elementary School since 1974. They were introduced by Title I and Learning Disability personnel. The following year, the 5th and 6th grade teachers began looking for a more effective language program than the traditional one they had been using. They settled on Corrective Reading Program: Comprehension B, were more than satisfied, and continued its use the following year. That same year Corrective Reading: Decoding B was initiated with students who were not experiencing success in the school's basal reading series.

As teachers used these programs, their use of DI techniques spilled over into their teaching of other subject areas in the classrooms. They also began analyzing the non-direct instructional materials they were using and restructuring the tasks they were presenting to the students.

At the beginning of the 1980-81 school year, the administration introduced DI in reading and language for the first grade curriculum. The next year, DI in math was initiated in the first grade. The programs continued the following years as the class was promoted.

At this time, the first and second grade programs used DI in reading, arithmetic, and language. The second grade also uses Spelling Mastery. In the third grade, Spelling Mastery, 1st Language, and DI are taught. The fourth grade uses Spelling Mastery and DI Language for all students and the Corrective Reading Program: Decoding B and C for those students who place into it. The fifth and sixth grade use Spelling Mastery and the Corrective Reading Programs: Decoding B, Skills Application C, Comprehension B, and Comprehension C. The Corrective Math Modules are used with some of the students to supplement the regular math program. Comprehension C is carried through into part of the seventh grade.

Teachers: From Concern to Commitment

This widespread use of DI in Center School has not come about without some questioning on the part of some teachers. Teachers who initially were not in favor of using DI continued to question various aspects of the programs through the first year they used them. However, after about a year of teaching, DI, they generally felt increasingly comfortable with the approach and began to look at their other materials more carefully and critically. DI techniques slowly began to appear in their teaching of other subjects.

Teachers' problems are still present, but they are more positive problems. For example, teachers are having difficulty finding enough quality seatwork for their students to complete during the time they are with another group. Now the teachers want work for their children that really teaches them something worthwhile, rather than simply keeps them busy. Correct placement of children in groups is also a major concern at this time. However, in earlier years, this problem wouldn't have been addressed. Most students would have been placed in the basal book for that room and the children would have had to sit or swim. Teachers are seeking more information on DI and classroom

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Breaking
The Code

A Comparison of Eight Beginning Reading Programs

Linda A. Meyer
University of Illinois

In 1978, two researchers (Beck & McCaslin, 1978) from the University of Pittsburgh Learning Research and Development Center (LRDC) published a monograph, "An analysis of Dimensions that Affect the Development of Code-Breaking Ability in Eight Beginning Reading Programs." The purpose of this study was to examine eight beginning reading programs to determine: (a) general program characteristics, such as how reading was defined, and the flow of instruction in the lessons, (b) letter/sound correspondences, such as how many letters and sounds are taught, and (c) how the teacher is to teach the program.

Beck and McCaslin (1978) performed this analysis, in part, because of the unresolved debate between code-emphasis (phonetic) and meaning-emphasis (sight-word) reading programs and the question of how beginning reading skills are presented in published programs. They were particularly concerned about reading programs used with compensatory education students. Those students who have trouble learning to read.

Beck and McCaslin's analysis builds on Chall's (1967) landmark book, Learning to Read, the Great Debate, in which

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Quality

by Stan C. Paine, Editor
DIRECT INSTRUCTION NEWS

Quality. It is a critical concept in business and industry, but it is little known in education. We hear the word mentioned during school budget election times when a letter to the editor of the newspaper asks us to vote for the budget and support the "quality of education" in our schools. Or we hear it referred to at an occasional school board or Parent-Teacher Association meeting or an education convention. But this casual and occasional lip service we pay to "Quality" in education is not the treatment it receives in the commercial sector.

The concept of quality is assigned a front-and-center-stage location in any production-oriented enterprise. If it is not, the enterprise is run out of business. It is the star of the show. Its name is on the marque — and everywhere else. I take my dry cleaning to Quality Cleaners. I buy Quality Checked dairy products. The companies sponsoring ads on my television set tell me that quality is their middle name, that quality is their way of doing business, and that the quality goes in before the name goes on (I had always wondered when it was added). Why all this fuss about quality? Well, would you buy anything that you knew was not of good quality — aside from junk foods, that is?

What is quality, anyhow? Clearly, it is different things to different people. To some, it is whatever is popular, such as Calvin Klein jeans. To others, it is durability, such as Tootsie Rolls, perhaps, which are said to last a long time, or Maytag, which is so dependable that the repair man gets bored to tears just waiting for a call to come in. To others, it is finding things made or getting things done the way they are supposed to be made or done.

What is quality in education? At a general level, it is the practice of educating children in the manner in which they should be educated. Obviously, this notion gets mixed up with people's values about what should be taught. But if we can agree about a few basic things that all students should be taught — such as reading, writing, speaking, mathematics, science, social studies, and perhaps something about music and the arts — we can focus instead on how they are taught and what to criteria.

For the most part, quality in education must be concerned, above all else, with outcomes. Too often, we argue about the process — about whether children should be taught to read using a phonetic or a sight word approach, about whether they should or should not be taught with manipulative objects in learning mathematics, about whether they should be taught science through an experiential or a language-mediated approach. The process can be anything, as long as it produces the desired outcome — time after time, with child after child.

The plain truth is that most educational approaches are not very dependable, and dependability is the one feature which, in education, as well as in business and industry, defines quality. If we are ever to break free from our legacy of succeeding only with the good students and falling with poor ones, we must adopt practices which are dependable — which are good enough to succeed with any student. That should be our striving.

There is at least one such approach available — the Direct Instruction approach to education. It is good enough to succeed with any student. It is dependable. It exemplifies quality education — but only when used correctly. It is only through correct use — using the programs in the manner intended by the developers — that Direct Instruction is most likely to produce its potential effects. While Direct Instruction programs have the potential to work, there are other programs — to provide a quality education for all students, we must still focus on the outcomes which are actually achieved with our students.

In business, workers and managers could simply go about their daily routines, then hope that everything turns out okay. But they don’t. They practice something called quality assurance, which means controlling the quality of what they do or of what they produce. In human services, like education, it’s not what we produce but the end result we are after. It is the consumer who pays for the product and it is the consumer who has the option of “bailing.” Hence, the term, “quality assurance” is offered in its place. Quality assurance is what you might suspect refers to the practice of assuring the quality of what one does. It is hard to argue with that.

In business, the quality of products and services is assured largely through two means — inspections and consumer satisfaction inquiries. These are carried out frequently: at least some of the products or services the business produces or provides are inspected every day.

When an inspection reveals a product which does not meet the company’s standards, it is sent back for fixing, and the problem is traced to its source. In education, “inspection” is called testing, which is carried out with varying degrees of rigor in various classrooms or schools. When the test reveals a student who does not meet the school’s or teacher’s standards, s/he is usually sent on, and the problem is attributed to the student. Student satisfaction inquiries, the other part of the quality assurance in business, are almost unknown in education.

Although education’s success is measured by achievement (and consumer satisfaction), rather than by profit and consumer satisfaction, as it is in business, education could learn much from the commercial sector about assuring the quality of what it does. By adopting a frequent inspection system (such as the Continuous Progress Test System developed for DISTAR), and developing a consumer (parent-student & community) satisfaction feedback system, schools could begin achieving a level of dependability with all students — a level of quality — that would make us all proud to be educators.

The DISTAR Continuous Progress Test System and the concept of consumer satisfaction measures will described more fully in future issues of the News.
Comprehension Instruction
Teaching Students to Detect Invalid Arguments

By William Patching, Ed Kamenski, Douglas Carnine, Russell Gersten, and Geoff Colvin

Various critical reading skills have successfully been taught to students at the high school and college level (Brownell, 1953; Livingston, 1965; Kemm, 1963; O'Brien & Shapiro, 1971). Yet, to date, only one study (Wright, 1977) has compared different approaches to teaching critical reading skills to elementary school students using a valid experimental design. Critical reading was defined as the set of processes or operations that occur when readers correctly identify valid and invalid arguments.

This definition of critical reading was applied to three categories of invalid arguments. Figure 1 presents the categories, the rules that students were taught to identify, and examples of the invalid arguments.

The experimental design compared the performance of students in two treatment groups with those in a no treatment comparison group.

Procedures for the Systematic Instruction group were developed according to the principles of instructional design articulated by Engelmann and Carnine (1982) in their text, Theory of Instruction: Principles and Applications. Special attention should be paid to Chapter 9 and Chapter 12.

Systematic Instruction used the principle of subskill analyses, mastery learning, and the cognitive routine model to develop a three-day teaching sequence. Students were taught an individual basis by a teacher who was trained to follow scripted lessons that specified how to teach each skill and model the application of the critical reading skills.

The second procedure, Workbook with Corrective Feedback, utilized the same instructional design principles, the same explicit statement of rules, and the same examples of the three categories of invalid arguments. However, in this case, rules and examples were presented in the workbook rather than by the teacher. The workbooks were corrected daily by the teacher and returned to the students, so that they received feedback about the correctness of their responses. This procedure was selected since it represented what Durkin found to be the dominant instructional practice in current reading programs (Durkin, 1979, 1981).

Students in the No Intervention (Control) group were given workbooks from a commonly used reading comprehension workbook program, that, like most commonly used workbooks, did not explicitly teach critical reading skills.

All students were evaluated on a battery of measures that assessed critical reading skills on three subskills. The hypothesis was that students from the Systematic Instruction group would perform at a significantly higher level on these tests than students not given this instruction and that the Workbook group would score higher than the Control group.

Subjects and Sampling Procedures

The subjects were selected from 4 fifth-grade classes in two public schools in a community of 125,000 in the Northwest. Two classes were randomly used for subject selection. First, subjects had to demonstrate reading skills that would enable them to read all of the tests and workbooks that they were required to complete without excessive word recognition difficulty. In addition, subjects were given a 11/2 screening test covering the three categories of invalid argument. Only students with scores of 60 or below were included. The 39 subjects who met the screening criteria were randomly assigned to one of three groups; each group was then randomly assigned to one of the three treatment conditions.

Instructional Procedures and Materials

The 13 subjects in the Systematic Instruction group were taught individually. Subjects in the other two groups (Workbook with Feedback and No Intervention) completed their workbooks or worksheets at their regular desks; they were then checked on an individual basis by the experimenter. In each case, intervention consisted of 30-minute instructional sessions. Total intervention time for the study was approximately seven weeks. During that time, the interventions were implemented continually for all three groups.

Details of each instructional procedure follow:

Systematic Instruction. The teacher utilized semi-programmed, scripted lessons and materials, a research procedure advocated by Gall (1977) to ensure fidelity of treatment.

Figure 2 presents an excerpt of the teaching script for one segment of a lesson. The sequence for the introduction of the three categories of invalid arguments was: (a) the ability to detect faulty generalization; (b) the ability to detect false causality; and (c) the ability to detect invalid testimonial.

The actual teaching sessions were conducted according to the principles of direct instruction or active teaching articulated by Stevens and Rosenshine (1981), and Good and Grouws (1979). These included brisk pacing of lessons (i.e., 8 to 10 learning tasks per minute), immediate correction of errors using procedures specified in the script, a high degree of immediate reinforcement for student responses, and teaching to a mastery criterion (i.e., each student was required to complete at least one practice example correctly without help from the teacher before going on to the next skill).

In the initial examples in each lesson, teacher prompting was maximized to make the suggested cognitive routine overt. For instance, when attempting the item in Figure 1 on detecting faulty causality, the subject would be required to read the passage aloud and the experimenter would ask, "Tell me one thing that happened in the passage." After the student responded correctly, the experimenter would ask again, "Tell me another thing that happened." After identifying the two things that happened, the experimenter asked, "What do we know about these two things?" The student was required to respond with, "They happen together..."

Figure 2
Lesson Script for Teaching Detection of False Causality

1. Teacher: Listen. Here's another rule. Just because two things happen together, it doesn't always mean that one causes the other.
2. Teacher: When two things happen together, does that always mean that one causes the other?
4. Teacher: No, just because two things happen together, it doesn't always mean that one causes the other.
5. Teacher: Listen. I'm going to tell you two things that happened together. "Mary wins every race she runs in. She wears her lucky ring during every race."
6. Teacher: Tell me one thing that happened.
7. Child: Mary wins every race she runs in.
8. Teacher: Tell me another thing that happened.

Correction procedure for steps 6-9: If child is incorrect, have child read each sentence. After reading first sentence, ask, "Is that one thing that happened?" Read second sentence. Then ask, "So, what's the other thing that happened?"

10. Teacher: What do we know about these two things?
11. Child: They happen together.
12. Teacher: Yes, we know that Mary wins every race she runs in and she wears her lucky ring during every race. Listen, here's another sentence. "Mary won the race today because she wore her lucky ring."
13. Teacher: Do you know that Mary won the race because she wore her lucky ring?
15. Teacher: Why not?
16. Child: Just because two things happen together, it doesn't always mean that one causes the other.
17. Teacher: Yes, just because two things happen together, it doesn't mean that one causes the other.
18. Continue with more examples for steps 6-17 of same type as one given.

Another Example for Steps 5-11:

Teacher: OK, here are two other things that happened together.

Lenny started getting bad grades in school last term. He and Jim became the best of friends last term.

Steps 12-17: Did Lenny start getting bad grades because of his best friend Jim?

Figure 1
Category, Rule, and Example for Three Invalid Arguments

Category 1:

Rule 1: The ability to detect faulty generalization

Just because you know about the part, it doesn't mean you know about the whole thing.

Example: Sue has long legs. She must be a very good runner.

Category 2:

Rule 2: The ability to detect false causality

Just because two things happen together, it doesn't always mean that one causes the other.

Example: John's mother would not open the windows in the house at night. "If you open that window, someone we know will get sick," A week later, John opened the window in the house and that night his sister, Susie, became very sick. Opening the window must have done it.

Category 3:

Rule 3: The ability to detect invalid testimonial

Just because an important person in one area says something is good or bad in another area, you can't be sure it's true.

Example: Dr. Smith is a very learned doctor and everyone loves him. He tells people why they are sick and helps them get better quickly. When I wanted to buy a lawnmower, Dr. Smith told me that I should, Continued on Page 15

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The topics for the 5 units of instruction represented areas covered in many middle school and junior high textbooks, including temperature, winds and moisture, climate regions, western forest regions, and prairie regions. Visual Display, Strategy, and Group Rehearsal. This group was taught the 5 instructional units with a program called Your World of Facts (Engelmann, Davis, and Davis, 1982), consisting of a teacher presentation, a strategy for comprehension of the visual content, and instructional games which allowed students to study and rehearse the content in a group setting (see Engelmann & Carnine, 1982). The main goal of the visual displays was to teach a system of facts that was specifically related to a topic. The teacher presented the visual display on the first day of each 3 lesson unit. Group rehearsal occurred in a game-like format on days 2 and 3. For each instruction unit, 3 groups were randomly assigned to one of the four instructional treatments: 1. visual display with strategy rehearsed in a group task-structure, 2. visual display with strategy, 3. group task-structure with strategy rehearsal, and 4. strategy rehearsal in an individualized task-structure. Measures included a posttest on content from the passage, a transfer test of performance on a content-specific social studies selection which contained graphics, and a consumer satisfaction questionnaire. Subjects The 84 subjects were all of the sixth graders in a middle class region, Oregon junior high school. Subjects were randomly selected from one of the four classes by the school administrator at the beginning of the school term. Consequently, there was a wide range of student ability levels within each class. The class size ranged from 19 to 24 students. Setting and Teacher The teacher in the study was the school's regular social studies teacher, who had 5 years of teaching experience. This teacher taught each of the four groups in the experiment. Instruction took place within the social studies classroom, and occurred at the regularly scheduled time for each of the four groups. The treatments were presented in the following order: visual display with group rehearsal, visual display with individual rehearsal, traditional instruction, and text with individual rehearsal. Materials and Procedures Students in each group were presented the same academic content, although the teacher, and each group varied slightly. Each group was quite different. All students received 15 lessons, which spanned 5 separate units. Each group consisted of 3 lessons. Lessons were presented daily and were generally 45 minutes long.
Teacher to Teacher

by Jane H. Dougall Coté
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Professional Growth: An Individual Challenge

Cathy Method
Bethel-Eugene-Springfield Teachers’ Center
Eugene, Oregon

Editor’s Note: Cathy Method is currently Director of the Bethel-Eugene-Springfield Teachers’ Center (BEST) Center. Prior to becoming Director, she was Coordinator of Inservice Planning for the Center. She has extensive experience in meeting teachers’ training needs and is particularly well suited to address the topic she has chosen here—helping teachers continue professional growth and development in the face of declining support for such activities. We welcome her suggestions enthusiastically and thank her for this timely contribution to the column—J.C.

The future of inservice training programs for teachers is uncertain. Budget cuts at all levels (federal, state, local) will have an impact on the availability of professional development programs and the degrees to which these programs are able to provide quality inservice training. The individual teacher will increasingly be expected to cover her/his own expenses for conferences and training events. As inflation cuts deeper into teacher’s pocketbooks, it will become more difficult for teachers to keep up with ever-changing educational trends and new teaching techniques.

Four years ago, federally funded teacher centers entered the world of education. Teacher centers provided the opportunity for teachers to have a voice in training programs that would help them gain knowledge and skills that they felt were essential for teaching. This year, many of them, including the Bethel, Eugene, Springfield Teacher (BEST) Center—along with the University, will close their doors because of lack of funding. While these centers may close physically, it is important to keep the philosophies and the influence they brought to education will continue.

BEST Center operated with the philosophy that effective training should be designed to meet teacher perceived needs, and should give teachers a voice in deciding how the training is provided. That philosophy proved successful. Over 1300 educators took advantage of the services offered by BEST Center, with teachers spending hours of their time attending training events. Teachers gave of themselves, while BEST Center offered a support staff to provide names of sources, make initial contacts and provide funds for instructors/consultants. What BEST Center soon discovered was that the most appropriate instructor/consultant was often “the teacher down the hall” and the Center came to rely more and more on classroom teachers to conduct training events or to serve as consultants for their colleagues.

The experience of BEST Center can serve as a model for teachers who wish to continue to grow professionally when many of the programs they have relied upon are no longer available. The following suggestions are offered as a means of helping teachers reach out and continue to grow professionally with a minimum of personal sacrifice and expense.

Become an Instructional Leader

Every classroom teacher is a leader by the very nature of their role in the classroom. They have to only to take that small step from being a leader in the classroom to becoming a leader among their colleagues. An instructional leader is one who keeps up on current trends in education, investigates new curricular programs and tests new teaching techniques. As a leader, you have the opportunity to promote sound instructional practices, share and develop curricula and influence your colleagues. Leadership provides a basis for continual growth and challenge.

Promote Tradeoffs

Getting to go to an important conference may often make the difference between standing still and keeping up with current trends in education. If funds for travel and training in your district are limited, offer to provide a training session for teachers at home in return for travel expenses. A wise administration will recognize that it is much more effective to fund experience when you can train 30 teachers for the price of one. Use your free time at the conference to gather and organize material so that you will have handouts for your colleagues without having to spend additional time gathering them later. In addition, promote the idea that people who attend conferences share materials with colleagues so that they can keep up on those events you are unable to attend.

Develop Partnerships for Learning

Learning new teaching techniques involves more than just a one-shot training session. Follow-up can often be accomplished by teaming up with a fellow teacher. Find a teacher willing to attend the training session with you and be sure to get a handout or to take notes on all the key points of the new technique. Return to your classroom and begin using the technique, then ask your partner to observe you in the classroom and provide feedback on your performance. Exchange roles until both of you are feeling comfortable with the new technique. Meet periodically to discuss problems or new ideas. Be sure to maintain contact with the original trainer so you will be able to get answers to questions as they arise. Get their address or phone number before you leave the training event.

Involving the School Principal

Be assertive about letting your principal know when you need training to learn a new skill or to improve an old one. The principal can use his/her influence to bring trainers to the school, particularly if that person is someone teaching elsewhere in the district. They can also use their influence to help you receive outside training, especially if you are willing to serve as a model for other teachers in your building. Never allow yourself to feel intimidated by requesting training; lifelong learners are a gift to society.

Join an Inservice Committee

The best way to influence the type of training offered in a school district is to involve yourself with the committees that make decisions about training. Know who the key people are in your district and get to know them. Volunteer when the need arises, and be the voice that says, ‘We need this training.’

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References

Strategies

Continued from Page 4

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A major strategy for enhancing teaching and learning is to design a program that is consistent with the needs of the students. This approach not only ensures that the students are engaged in active learning, but also promotes a positive learning environment. The approach is based on the following principles:

1. Students should be actively engaged in learning.
2. The teacher should be the primary source of information.
3. The teacher should be ready to provide immediate feedback to students.
4. The teacher should be able to adjust the pace of the instruction to meet the needs of the students.

By adhering to these principles, teachers can create a learning environment that is conducive to student success. This approach is particularly effective in high school settings, where students may have varying levels of prior knowledge and experience. Additionally, the Direct Instruction method is effective in many different subject areas, including mathematics, science, and social studies. Overall, Direct Instruction is a powerful tool for enhancing teaching and learning in the classroom.

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research for over half a century pointed to the superiority of character education programs over reading instruction programs through the end of third grade. Subsequently, when effective programs were marked differences in lesson organization. All of the code-emphasis programs required that all students perform the same activity before beginning study. Distar is a particularly good example of this, as the first 36 lessons (computed as approximately 7 weeks of school) are 100 percent skill development. The first story appears on lesson 37. With the introduction of the first story, word-attack practice precedes story reading. The lessons are organized to provide practice on new sounds and words before the students read those words in stories.

Beck and McCallin study the other hand, all these lessons have organized for story-reading before phonics practice. In these lessons, the students use context and picture clues to figure out new vocabulary. The phonics exercises appear sporadically after story-reading and sight words, or whole word reading is practiced during story reading. One exception is in Merrill (Bank Street, Second Edition), where three sight words are inserted in each story, one of which is new. In the analysis that presents word-attack practice on this schedule,

Beck and McCallin studied lesson organization to determine: (a) what, (b) when, and (c) how reading skills are taught. The extent to which the skills taught made the inductive process of word recognition easier for the students. They counted the number of graphemic units taught in each of the eight programs, recognizing that there is disagreement about how many phonemes are unique, and therefore necessary, to cover the different sounds.

Letter/Sound Correspondences

There is no simple way to summarize the Beck and McCallin graphemic count. The number of graphemes taught in meaning-emphasis programs ranges from 111 (Houghton Mifflin, Bank Street, and Open Highways) to 133 (Bank Street). This average number of graphemes taught in the eight programs is 95. As this count is based on student progress, the number of graphemes emphasized in the meaning-emphasis or code-emphasis programs, Beck and McCallin deduced further that which correspondences are taught.

Using this criterion, Beck and McCallin found the following correspondences: (a) teaching short vowels. They found similar agreement for teaching single consonants, but much less agreement for teaching long vowels, diphthongs, double consonants, initial and final consonant digraphs, vowel variants or other graphemic units.

This inconsistency suggests that the eight programs disagree on which graphemes are most important. The table below lists the frequencies for these correspondences. The graphemic units differ in utility—some are simply more useful to develop first and second reading vocabularies. Second, the programs differ in how they extend a particular correspondence; some extend a correspondence only explicitly taught to graphemes transferred from those taught. To examine this further, they next studied the sequence of the correspondences, taking into consideration letters that look alike, letters that have more than one sound, letters that combine to produce a new sound, and the ease and utility of correspondences. Table 1 illustrates a ranking from Beck and McCallin's analyses of these variables.

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<th>Sequencing</th>
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<th>Letter Combinations</th>
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</table>

The fourth and final category of letter/sound correspondences explored was what Beck and McCallin called, "Ease of Correspondence Learning and Utility of Correspondences." They grouped these two variables together, stating that the only meaningful assessment of a letter's ease of learning is its utility of correspondence—how useful the letter is for reading words. In other words, Beck and McCallin recognized

Table 1. Comparison of Eight Programs for: Letter/Sound Sequence, Multiple Sounds, Combinations, Ease and Utility of Correspondence

The full set of scores from the ranking of the programs in each category in Table 1 shows Distar as the highest-ranking program, followed by Bank Street, with Houghton Mifflin and Houghton Mifflin tied for third place, and Merrill and Houghton Mifflin in fourth place, and Open Highways and Pal Alto are fifth.

Beck and McCallin looked at how the content of the programs is taught. They compared the teaching methods in each of the eight programs.

Teaching the Programs

In this analysis, Beck and McCallin focused on the programs directed the teachers to teach the short vowel or i. Most of the Alternation for this part of the analysis came from the teacher guides, except for Distar, the only program studied that provides a script for the teacher to follow for all parts of the lesson. Beck and McCallin examined the content and utility of each letter/sound correspondence whether or not the letters students would be able to master the letter/sound cor-

Continued on Page 7
responsibilities based upon the instruction the programs provided to the teachers. They also looked at whether the teaching is sufficient to teach blending. Thus, this analysis was limited to a review of the code-emphasis programs. Table 2 outlines the skills taught in each of these four programs.

Table 2 Program Characteristics in Four Code-Emphasis Programs

| Component | Distar | a. direct approach | b. pure auditory | c. symbol identification | d. symbol discrimination | e. blending practice | f. very frequent review | Sullivan | a. long/short vowel discrimination | b. whole words | c. unable to synthesize | Alfredo | a. teacher-directed | b. letter forms/identification | c. synthesizing activities (e.g., spelling) | d. children will synthesize | Palma Alto | a. teacher-directed | b. letter forms/identification | c. sound discrimination |
|-----------|-------|-------------------|----------------|-----------------------|------------------------|-------------------|----------------------|----------|----------------------|----------------|-------------------------|--------|---------------------|----------------|-------------------------|-----------------|---------------------|----------------|

5. Only Distar provides a specific strategy for teaching blending.
6. Reading vocabularies in all of the programs are generated from the letter-correspondences taught up to that point.

Beck and McCallin summarized their findings by ranking the code-emphasis programs in this order: (1) Distar, (2) Palma Alto, (3) Sullivan, and (4) Merrill. Similar reviews follow for the four meaning-emphasis programs in Table 3.

Table 3 Program Characteristics in Four Meaning-Emphasis Programs

<table>
<thead>
<tr>
<th>Component</th>
<th>1. Glenn</th>
<th>a. letter correspondences taught frequently with pictures</th>
<th>b. many pure auditory tasks</th>
<th>c. word identification through context</th>
<th>d. rules for long/short vowel sounds</th>
<th>e. complete instructional vocabulary</th>
<th>f. little direction for teachers</th>
<th>g. learning patterns</th>
<th>h. anticipate students will have problems</th>
</tr>
</thead>
</table>

2. Houghton Mifflin:

a. combined letter sound/context strategy
b. complicated instructional activities
c. consistent instructions, daily reinforcement
d. multiple sounds introduced for a single letter
e. anticipate students will have problems
f. no word building activities

3. Bank Street

a. pure auditory beginning lessons
b. difficult short vowel discriminations
c. fair amount of repetition
d. some word-building exercises

4. Open Highways

a. long and short vowel words introduced simultaneously
b. problems directed at sorting long and short vowel sounds
c. complicated instructional vocabulary
d. large number of rules presented
e. anticipate students will not learn the correspondences

From the Table 3 analysis, Beck and McCallin conclude that compensatory-education students will have difficult
d. stress in any of the meaning-emphasis programs. They point out that the teaching sequences in these programs are based on the programs lack of explicit instruction necessary for success beginning reading instruction with compensatory education students. They also point to studies demonstrating the difficulty that compensatory education students have with phoneme recognition. From their own clinical experiences and their program analyses, they fear that the strategies in the meaning-emphasis programs will be inadequate for students who have trouble learning to read.

Conclusions and Suggestions

The Beck and McCallin study is a careful analysis of eight beginning reading programs. Their primary task was to examine programs most often used with compensatory education students. They determine that the general program characteristics, how letter/sound correspondences are taught, and the pedagogy of the programs—how the skills are taught—are important with the premise that programs would be more successful with the student who has trouble learning to read if the programs present phonics exercises and utilize the letter/sound correspondences. They divided the eight programs into four that represent the code-emphasis approach and four that represent the meaning-emphasis approach. This division allowed a comparison of the basic characteristics of the two approaches as well as an analysis of specific characteristics of each of the eight programs.

The authors focused on the way the materials were sequenced, the examples given, and the exercises provided. They also looked at how the teacher was instructed to deliver the lessons. Their examination of the pedagogy forced Beck and McCallin to conclude that the "pedagogy for teaching corresponding strategies" in the two approaches is variable. If the pedagogy is so convoluted that the correspondences cannot be learned, or if it requires that the learner recognize that the meaning will have it matters little that the program contains requisite sequencing" (p. 68).

This conclusion was the importance of programming strategies (how the materials themselves are sequenced) to teaching strategies (the teaching habits of the teacher delivers the program). They conclude that while most compensatory education students will profit successfully in the code-emphasis programs (Distar, Palma Alto, and Merrill), and Merrill, students will learn the frequently neglected blending skills that actually work in decodable words. Further, Beck and McCallin conclude that students who have trouble learning to read will be unsuccessful in the meaning-emphasis programs. They also tell that basals have changed little since the appearance of Chard's Learn to Read. The Great Debate (1967).

In conclusion, Beck and McCallin state, "we ourselves favor the direct teaching of letter/sound associations, not only for the increased transfer to spelling, but also for the initial ease of acquisition" (p. 70). They suggest that direct teaching which does not assume that the students have sophisticated auditory skills has a greater chance of success with large numbers of students. They go on to add, "we consider Distar to be the program most effective in teaching beginning reading skills (p. 70-71). They draw parallels from their program analysis to Rosenhain's (1979) conclusion of direct instruction and go on to present their model of direct instruction for teaching beginning reading:

1. A direct/sound correspondence instruction
2. A definite instructional strategy for teaching letter/sound correspondences
3. Repeated opportunities to apply and generalize correspondences and blending to words in connected text (p. 72). This analysis has implications for teachers faced with evaluating published instructional programs. In general, teachers should:

1. Identify the most important skills for the level of the program
2. Compare programs simply on these criteria
3. Look carefully at how the program is sequenced and how it is to be taught
4. Determine how much and what kind of practice appears in the program

In summary, relatively simple guidelines should help teachers evaluate materials in a meaningful way—and should help beginning readers master the skill without undue difficulty.

References

Beck, L., & McCallin, R.S. An analysis of dimensio

nel development of the code-reading ability in eight beginning reading programs. Learning Research and Development Center, University of Texas, 1979.


Haug, J., & McCallin, R.S. Instructional Design. In Instructional Programs.


Horn, C., Smith, R., & Rever, P. The Open Highways reading program (5th ed.). Columbus, Ohio: Charles E. Merrill, 1971.


Correction

In the last issue of the DI News, the research summary reporting the early findings of the DI High School Follow-up study incorrectly listed Russell Garsten as Director and Linda Meyer as Co-author for the research in the project, "The 137 (New York City). Meyer is Director of the research project at the New York School and serves as Research Analyst there. Garsten is Director of the study at each of the other follow-up sites. We apologize for this error. (Eds.)

DIRECT INSTRUCTION NEWS, WINTER, 1983
Marilyn J. Monteiro & Thomas J. Healy
Dallas (TX) Independent School District

"The authors extend their thanks to Susan Brown, Ruth Ann Cummings, Lynn McCormick, Marcia McMahon, Eva Tremblay and Sally Wood. As Applied Research scientists, their assistance in the development and implementation of the checklist and supervision model was invaluable.

The Title I Schoolwide Project was a two-year direct instruction implementation involving two early childhood elementary schools (kindergarten through third grade) in the Dallas Independent School District (DISD). Eighty percent of the students in each school met the school lunch criterion for economic deprivation. In the project, both Title I and non-Title I students received the same daily instruction. The curriculum consisted of direct instruction programs (DISTAR reading, language and arithmetic, Spelling Mastery, Corrective Reading and Corrective Math). This article will focus on the teacher supervision component of the Schoolwide Project.

Each school was staffed with eight to ten teachers per grade level. Student population in each school was between 450 and 500 students (teacher-student ratio of 1 to 15). Three project supervisors worked directly with 12 to 15 teachers each, under the supervision of the building principals and with accountability to project staff. The project coordinator worked through the district administrators and building principals and monitored the supervisors. The systems analyst coordinated the instructional management process.

Project Goals

The major goal of the Schoolwide Project was to raise the academic achievement of participating students to grade level or above. This was done by: (1) using direct instruction programs to teach reading, math, language and spelling; (2) implementing a supervision model that would ensure that the programs were being utilized effectively; and (3) designing an instructional management system to monitor the critical variables continuously. These variables included teacher effectiveness, lesson progress and content mastery.

Supervision Model

The supervision model was designed to ensure that teachers implemented the curriculum effectively. It allowed for recognition of skill strengths and remediation of skill deficits. Supervisors used multiple measures to guide their decision regarding classroom interventions. The major measures used were: (1) rate of lesson completion and student worksheet errors, as collected daily by teachers and summarized weekly by supervisors; (2) teacher performance as indicated on criterion-referenced tests administered throughout the year; and (3) teaching performance, as evaluated by the supervisor on teaching and management skills checklists.

Supervisor Schedule

To efficiently schedule their time, supervisors tracked which groups they had and had not observed and/or evaluated on a Monthly Summary Sheet. Supervisors noted what type of interaction had occurred (e.g., supervisor observed, consulted, taught group, etc.). This form allowed supervisors to scan their pattern of contact with teaching groups quickly and make decisions about what groups needed to be observed.

Teaching Skills Checklist

Direct instruction teaching skills have been outlined by Project Follow Through staff in a supervisor's manual (Skillman, Garcia and Witcher, 1977). During the first year of the Schoolwide Project, staff used the Follow Through Model's Teacher Performance Form to assess teacher skills. This form prompts the supervisor to monitor knowledge of formats, use of signals, pacing, teaching to criterion, use of reinforcement and corrections, provision of individual turns, and observation of students while responding, as well as to give the teacher an assignment to help improve any skill deficiency. However, these skill areas had not been defined to allow for effective shaping of teaching skills. Variability existed in terms of supervisor and teacher definitions of such categories as "criterion teaching" and "corrections."

Other categories were so general, e.g., "reinforcement," that explaining an assignment for a teacher became very difficult. Also difficult was the process of training new supervisors to observe and specify relevant teaching variables. As part of the Schoolwide Project, the supervisor staff specified the behavioral components which make up direct instruction teaching skills categories. During the second year of the project, a diagnostic teaching skills checklist based on these categories was piloted.

Upon first observing a group, the supervisor completed an assessment to determine strengths and weaknesses in teaching and management skills. This assessment consisted of one or more observation sessions, after which the supervisor rated the teacher's performance on all checklist categories. The supervisor then selected the skill areas on which to provide training, and provided the teacher with an assignment on the appropriate diagnostic teaching or management skills checklist.

Figure 1 depicts the checklist used to assess a teacher's skills in delivering teaching formats using appropriate pacing. In using this form, the supervisor would observe and rate the teacher in each category, make notes and comments as needed. Consistency of skill use was also rated. If the skill was not evident, the teacher was rated in that category as "skill improvement needed." The supervisor then made relevant assignments.

As soon as possible following the observation, the supervisor and teacher met to review briefly the ratings and the recommended assignment. If an assignment was made, a follow-up visit was planned by the supervisor. Once the follow-up observation occurred, the teacher, supervisor and principal each kept a copy of the completed assignment sheet.

Management Skills Checklist

During the first year of the Schoolwide Project, the focus was on building a teaching staff skilled in presenting direct instruction programs. Although classroom management issues were addressed, they were not emphasized until the second year. Prior to the start of the second year, the project staff planned a series of inservice sessions to provide teachers with standardized training in the area of classroom management. Nine workshop units were implemented during the fall inservice.

To monitor and shape teacher management skills effectively, supervisors rated teacher performance on a set of management skills checklists. Figure 2 depicts the checklist used to assess the use of rules and procedures. The management skills checklists were used in the same fashion as the teaching skills checklists.

-- DIRECT INSTRUCTION NEWS, WINTER, 1983--
Figure 2
Title I Schoolwide Project — Diagnostic Management Skills Checklist

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Supervisor</th>
<th>Group</th>
<th>Level</th>
<th>Lesson</th>
<th>School</th>
</tr>
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1 = Consistent use of skills  2 = Inconsistent use of skills  3 = Skill improvement needed

**Initial**  Follow-up

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<th>4</th>
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<td>6.2 Distributing supplies and materials, e.g., has students share can of crayons on work tables, puts folders in front of students, has pencil box.</td>
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Recommended Assignment:  Date checked:  Date due:  Follow-up comments:

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Figure 3
Title I Schoolwide Project
Global Rating Form

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Supervisor</th>
<th>School</th>
<th>Grade</th>
<th>Date</th>
<th>Subject</th>
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**Effective:**

**Ineffective:**

1. Consistent Use of Skills
2. Satisfactory
3. Marginal

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<td>8</td>
<td>a. CRITERION TEACHING: Confirms all students meet lesson mastery criteria before beginning new task.</td>
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<td>b. CORRECTIVE TEACHING: Use basic and advanced correction procedures to insure task mastery for all students.</td>
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<td>1. TASK RE-TEACHING: Avoids unnecessary repetition on individual tasks.</td>
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<td>1. DIAGNOSTIC PLACEMENT: Identifies possible placement problems or skipping points to maximally accelerate student progress through program.</td>
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<td>1. PREPARATION: Prepares sufficiently to deliver programs in a technically precise fashion.</td>
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<td>8</td>
<td>1. EXPANSION AND FIRMING: Plans and implements procedures for providing students with supplementary expansion and/or firming activities, as appropriate.</td>
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**Teaching Procedures**

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<td>a. FORMATS</td>
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<td>c. SIGNALS</td>
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<td>d. MAINTAINING STUDENT ATTENTION</td>
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<td>e. INDIVIDUAL TURNS</td>
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<td>f. BASIC CORRECTIONS</td>
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<td>g. ADVANCED CORRECTIONS</td>
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**Management Procedures**

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<td>a. DIRECT INSTRUCTION ORGANIZATION/PLANNING</td>
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<td>d. ADVANCED PRAISE</td>
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<td>e. TECHNIQUES FOR INAPPROPRIATE BEHAVIOR</td>
</tr>
</tbody>
</table>

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**Reference**

Cursive Writing Program

AUTHORS Samuel Miller, Siegfried Engelmayer
RANGE Third and fourth grade students or older
DESCRIPTION The Cursive Writing Program is a 140 lesson direct instruction program that teaches children how to form the various letters, create words, write sentences, and write faster and more accurately. Special features include simplified orthography, emphasis on high-letter combinations, and design features such as the slant stroke to ensure correct paper placement. Exercises require only 15-20 minutes of daily work.
ADMINISTRATION The program is suitable for individual, small group, or an entire class.
COMPONENTS Teacher Presentation Book includes (a) Detailed specifications for each lesson (b) Complete information and reproducible material for placement testing (c) Information on how to supplement the program (d) Student Workbook includes (e) Practice papers for each lesson (f) Point Summary Chart

1. Cursive Writing Program
   Teacher Presentation Book
   $25.00
2. Cursive Writing Program
   Student Workbook (1 ea.)
   $4.00
3. Cursive Writing Program
   Student Workbook (pkg. of 5)
   $19.95

I Love Library Books

AUTHORS Janice Jensen, Siegfried Engelmayer
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 basal reading programs so the selected books 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 (a) Complete lesson plans for introducing 37 books (b) Computer analysis chart matching each book with a specific page and text of 8 basal reading programs (c) Procedures for record-keeping and assessment (d) Creative, time-efficient reinforcement activities (e) Student Workbook includes (f) Introduction sheets for each book (g) Student record sheet (h) Supplementary worksheets

1. I Love Library Books
   Teacher Presentation Book
   $26.00
2. I Love Library Books
   Student Workbook (1 ea.)
   $4.00
3. I Love Library Books
   Student Workbook (pkg. of 5)
   $19.95

Your World of Facts

AUTHORS Siegfried Engelmayer, 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, introducing 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.
ADMINISTRATION The Teacher Presentation Book contains guide information and instructions for each lesson. The 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

1. Your World of Facts
   Teacher Presentation Book
   $25.00
2. Your World of Facts
   Student Workbook (1 ea.)
   $4.00
3. Your World of Facts
   Student Workbook (pkg. of 5)
   $19.95

Speed Spelling

AUTHOR Judy Proffitt
RANGE Learning disabled and retarded children who have not mastered grade school spelling skills
DESCRIPTION Speed Spelling is an individualized, phonics 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 90 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, Scoring sheets, 90 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

1. Speed Spelling Kit, manual, 20 Student Books, plus Word List Packet
   $74.95
2. Speed Spelling Student Books (pkg. of 20)
   $5.40

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By Russell Gersten
University of Oregon

Editor's Note. This article is the second of a two-part series reviewing DI research with special education students. In the first part, which appeared last issue (vol. 2, no. 1), Gersten introduced the series and reviewed studies which had employed true experimental designs. In this part, he summarizes studies which have used quasi-experimental designs and identifies future areas of research in direct instruction.

The studies discussed in the first part of this series involved random assignment of subjects to educational treatment. Although this practice is not perfect, it offers some degree of methodological rigor to questions which minimal descriptive techniques make impossible or unfeasible to assign children to educational program randomly. There are, however, technical and methodological reasons why most school systems will not allow selection of educational programs for individual students. Two other methods (random selection of students and random assignment of students to different programs) would have been impossible to determine by the toss of a coin or a flip through a random numbers table. Even though they are comprehensive (in press) and Gersten, Carmine, and Williams (1982). In addition, Stein and Goldman (1980) study is the only study involving Direct Instruction to utilize the non-equivalent control group design. In this case, the authors did much to insure that the two samples were comparable.

Non-Random-Comparison: Longitudinal Growth of Moderately Retarded Students

The non-random comparison is a relatively new design originating in the work of Horst, Tallmadge, and Wood (1975) in Title I evaluations. In many ways, it is an easy design to implement. Students are pretested and post-tested on the same form and level of a well-normed, reliable, standardized achievement test, whose content matches the objectives of their curriculum program. The gain against the standardization sample is assessed for statistical and educational significance. There is no need to select a control group; the standardization sample of the test serves this purpose. In theory, the standardization sample should be similar to the target population; i.e., Title I students should be compared to other low income students, special education students to other handicapped students, etc. (Stein & Goldman, 1980). In practice, every standardized test in use is normed on a primarily non-handicapped population. Students have to be willing to use these sources of comparison. This situation is slowly changing with the development of several new instruments. A curriculum-referenced test of academic and social skills called the Student Progress Record (Oregon Mental Health Division, 1977) has been developed in the state of Oregon that hedges research is dedicated to Me. In the case of the PIAT or on measured IQs.

Students were post-tested on both these subtests of the PIAT. A significant difference was found between DI and PA Alto. The mean gain for the DI group corresponded to 15 months for 9 months of instruction; the mean gain for the PA Alto corresponded to 7 months. The differences were present in both reading recognition and comprehension subtests. It should be mentioned that the early level of the PIAT measures primarily literal (as opposed to inferential) comprehension which may account for the significant differences found. The study looks at two commonly used special education programs. In each, articulates four salient variables of interest (mentioned above). The study gives a reasonably clear indication of the combination of variables that was most effective. It is unfortunate that no classroom observations were done during the teaching sessions to assess: (a) the extent to which teachers were following the procedures specified by the curricula, and (b) qualitative differences in the aforementioned four variables of interest. Another crucial issue would be amount of practice on each skill (including review and delayed practice of certain tasks) that each program offered. The importance of practice and review has been documented by Good and Grouws (1979). Procedures for this--or any other--educational program must be developed beforehand. In this case, the authors did much to insure that the two samples were comparable.

Non-Random-Comparison: Longitudinal Growth of Moderately Retarded Students

Since no comparison group was feasible in this situation, the standardization sample of the Stanford-Binet served as a comparison standard; the progress of these students was compared to the progress of those in the Stanford-Binet norm group with similar IQs. Students were tested on the Stanford-Binet upon entry and again 4 years later. Their mean growth in standard score units (i.e., IQ) was assessed for statistical and educational significance (Tallmadge, 1977) after a correction for regression was made (Campbell & Eberbach, 1970). The mean IQ at entry was 41.9 (SD = 2.6). After 5 years of the program, the IQ was 52.8 (SD = 5.4). If there was only a regression effec- t operating, the mean IQ at post-test would have remained at entry (i.e., 36 standard deviation units beyond what would be expected from regression. This gain was therefore based on statistically significant and educational significance. The moderately retarded children in this sample were gaining at a significantly faster rate than their non-handicapped peers, even though typically these children would be expected to lose against the norm group. These students were well above the median standardized tests in Reading and Language; the mean scores were comparable to an end-of-third grade level in language and early third grade level in reading. The children appeared to be close to meeting the basic reading literacy skills essential for vocational training and independent living.
Direct Instruction Reading

By Douglas Carnine and Jerry Silbert


This book may be purchased through the Association for Research in Computers at a cost of $20.00 for members and $23.95 for non-members. (Please add $3.00 for each book ordered to help cover shipping and handling charges. To order, write: Association for Research in Computers, P.O. Box 1002, Eugene, OR 97440.)

Unlike virtually all other reading textbooks on the market today, Direct Instruction Reading wastes no time in discussing issues which are peripheral to reading instruction. It gets right to the point in maintaining what it takes to teach students to read.

Carnine and Silbert's book offers viable teaching strategies and instructional design strategies, which together form a sound basis for the teaching of reading. It is the only reading text I know of that provides teachers with a theoretical model, its practical application, and research data to substantiate its use.

Carnine and Silbert based their teaching strategies on more than 14 years of research data compiled by the Direct Instruction Follow Through Project at the University of Oregon. Their book is based on the philosophy that teachers are responsible for student learning, and each student is a unique child that can be taught. With this philosophy, Carnine and Silbert explain how to teach specific reading skills and provide alternate strategies to employ when students encounter failure. These procedures have been used with success with the CEPK, a self-contained, bilingual, and economically disadvantaged students.

Direct Instruction Reading should not be viewed as a recapitulation of the DISTAR Reading Series, which is also available with Direct Instruction research and teacher training procedures at the University of Oregon. Carnine and Silbert have used the basic design strategies that are incorporated in DISTAR, but have expanded their application to a variety of commercial reading programs and materials.

Carnine and Silbert divided their book into five major units. These units include a perspective on the direct instruction model, an in-depth approach to teaching reading from beginning reading through third grade, and techniques for motivating students. Each incorporates a thorough and up-to-date review of research related to each topic covered.

The unit on beginning reading covers the first few months of instruction and opens with Carnine and Silbert's reasons for choosing code-emphasis programs over meaning-emphasis ones. Also included in the unit are subsections on auditory skills, letter-sound correspondence, word reading of both phonetically and irregular words, passage reading, and vocabulary and language skills.

Primary reading follows the beginning stage and continues until third grade. Subsections in this unit cover phonics, structural, and contextual analysis, along with comprehension skills. Higher level comprehension skills such as inference and critical reading are included in intermediate reading instruction which continues through the eighth grade. Additionally, the unit on intermediate reading focuses attention on vocabulary instruction through the use of morphemic and contextual analysis, and reading instruction in content area textbooks.

Skills (for each of these three levels of reading instruction: beginning, primary, and intermediate) are task analyzed to ensure that teaching occurs in a sequenced and necessary preskill are identified. Direct instruction methods for teaching each of the skills present in a clear, concise and easily understood format.

Much of the criticism of Direct Instruction Reading has been directed towards the provision of scripted formats for teaching each of the skills presented in the units. In my opinion, these formats help teachers to make the transition from theory into practice. They further illustrate the use of the direct instruction approach by providing a step-by-step analysis for teaching skills that includes teacher talk, expected student responses, and consistent correction procedures for remediating student errors. These formats should prompt us to examine our ability to explain skills in a clear, logical, and sequential manner.

They help us to focus on minimizing teacher talk, while maximizing opportunities for student responding. This in turn reduces more on-task behavior from our students and provides additional opportunities to monitor student acquisition of new skills. The consistent correction procedures also facilitate learning by focusing on relevant features of the learning task and by providing immediate feedback to the learner.

An added attraction of Direct Instruction Reading is the inclusion of application exercises following the literature reviews at the end of each subsection. These applications exercises are excellent for use in reading instruction classes. They require teachers to use information gained from the section to solve classroom problems and to remediate specific errors their students may make.

Carnine and Silbert have made a significant contribution to the literature on reading instruction. Direct Instruction Reading describes an empirically based, demonstrated-to-work, technology of teaching that insures student success. Furthermore, Carnine and Silbert show that good teaching techniques are truly cross-categorical. These techniques work across categories of age, ability levels, and skills. Such a technology of teaching is indeed necessary if we are to bridge the gaps between regular and special education and between high and low performers. For teachers, specialists, aides, and researchers, I recommend this book most highly.

reviewed by Donna Dwiggins

(Donna Dwiggins is a teacher and supervising teacher in the Irving (Texas) Public Schools. She has extensive experience teaching reading and reading instruction from the elementary through the college level.)

The Chalkboard in the Kitchen

By Teresa Savage


This book should be a significant help to mothers and fathers interested in teaching reading and arithmetic to their preschoolers. The slim volume offers a detailed home teaching program based on sound educational methods and presented in lively, easy-to-read style and format.

The "kitchen chalkboard" program uses a direct instruction approach to home teaching. The reading lessons resemble DINSTAR (with some Montessori and other techniques added). Phonics is the core of the program. Letter sounds, not letter names, are taught—most common sounds first—with heavy emphasis on decoding, blending, and rhyming skills. Sight words are introduced only after the program is well underway. The program provides many opportunities for early success: positive reinforcement and shaping are strongly emphasized, the instructional pace is geared to the individual child's needs, and systematic review is incorporated in the lessons.

Most of the book is in the form of daily lesson plans, accompanied by specific activity or games. Together, the lessons form a several-month program intended to help the preschooler become a fluent reader and (counter). The daily lesson plans are accompanied by weekly assignments. In addition to the chalkboard work, the book begins with guidelines for time use and behavior management, preparation of the learning environment, and a series of games, not lessons, to strengthen reading readiness and promote love for the learning environment.

Throughout, the book is exceptionally readable. The 5-3/4 X 8-1/2 inch size fits easily in the hand and does not appear forbidding—a major consideration for many parents. The type is large enough to be read easily. A concise and attractive series of subheads is used to break the chapters into short segments. Rather than presenting page after page of uniform typescript, the text is broken throughout the book by a series of car toos starting Daisy, a hipopotamus and Macadoo, a parrot.

The author, Teresa Savage, shows real gift for being able to talk with parents in their own terms about issues of concern in many homes. Savage successfully avoids professional jargon.
Ideally, the progress of these students would have been compared to a norm group of moderately handicapped children, but such data were not available. The standardization sample of a well-known test such as the Stanford-Binet or the Comprehensive Test of Basic Skills is a legitimate, if overly stringent, comparison standard, and it is on this basis that the students rated, as described in the previous section.

The teachers and paraprofessionals involved in the programs emphasized that teachers were responsible for the growth of all children, including the lower performers, and that with adequate preparation, feedback, and reinforcement, the low performers could achieve at a superior rate. IQs were never used for placement purposes or referral for special services; placement and grouping were determined solely by criterion-referenced tests. The Metropolitan and Wide Range Achievement Tests were used to assess progress in reading and mathematics. The Slosson Intelligence Test (SIT) was used to measure growth in general verbal competence.

In analyzing the longitudinal achievement data, the hypothesis was that the yearly academic growth rate would be no different for the lower performers than the others in the program. Through the low IQ students enter kindergarten with lower academic skill levels and leave the third grade with lower skill levels than their normal or high IQ peers, we believed that their yearly growth, their ability to profit from schooling, would be roughly the same as their peers.

No significant interactions (e.g., no relation between IQ level and achievement gain) were found between entry IQ level and WRAT Reading (a measure of word identification) or Total Math on the Metropolitan Achievement Test (a measure of math problem solving, concepts, and computation). Considering a measure of reading comprehension and vocabulary. Here, the low IQ group sample gained significantly less than the higher IQ children during third grade (see Figure 3).

The average gain on the SIT, a shortened version of the Stanford-Binet, was 8 IQ points, maintained over four years, for the entire sample of 717 children. The mean growth for the lower IQ block of 7 IQ points over the 4-year period (adjusted for regression artifact). These low IQ students are demonstrating one year's growth for each year in school in mathematics, and even higher levels in reading (decoding). They also show growth in the general language and conceptual skills assessed by the Slosson, representing a net gain of 17 IQ points. The picture is less promising in the area of reading comprehension and vocabulary. Although they seem to learn the initial decoding skills adequately, these children need more systematic instruction in vocabulary concepts and word meanings as they progress through school (see Becker, 1979). However, in general, these secondary analyses document the effectiveness of a mainstreamed model with DI teaching techniques. Direct materials and mastery learning principles for children who would typically be considered "at risk" or mildly handicapped.

Documentation Activities

At this point, I wish to distinguish between evaluation research, where the effectiveness of an instructional program or instructional variable is measured using a valid research design, and documentation activities, where test score depicting the impact of a program are recorded without the benefit of the comparison standards presented in experimental or quasi-experimental designs. In the last decade, there has been a good deal of documentation of the impact of DI Instruction programs with handicapped children in Australia. These studies are summarized in Becker, Engelmann, Carnine, and Maggs (1981), Maggs and Maggs (1979), and Stephens (1980). Though this activity may offer administrators, decision makers, curriculum programmers, and parents some evidence of the impact of these programs, rather can serious inferences be drawn. An example will illustrate this situation.

Figure 1

Longitudinal Progress of IQ Block for Children in an Enriched Mainstream (IQ 70-85)

Figure 2

Longitudinal Progress of IQ Block during 2nd and 3rd Grade for Children in Enriched Mainstream (IQ 70-85)

Figure 3

Longitudinal Progress of IQ block for children in mainstream (IQ 70-85)

throughout most of the book "diphthongs" "phonograms" (do sneek in). She discusses such practical points as where to locate the classroom, how to involve the other parent in the teaching process, what to do with siblings during the teaching, and how to collect inexpensively the relatively few materials necessary for the lessons. A string of droll humor runs through the book.

The author has done an exceptional job of translating sound learning principles and teaching methods into language and concepts appropriate for most parents. The Chalkboard in the Kitchen deserves an enthusiastic reception.
Research Review

Appel, Kelleher, Lilly and Richardson (1975) documented the effectiveness of Direct Instruction in the areas of Distor and Rebus (Woodcock, 1967) for 60 moderately retarded children. The study was based on the premise that given appropriate curricula material, many moderately retarded children can be taught to read at a normal level. The Rebus and Distor reading programs were selected because both were structured programs. However, Rebus utilized a whole word approach, whereas Distor utilized a synthetic phonics approach to oral grammar. The authors did not use random assignment, nor did they indicate on what basis subjects were assigned to a reading program. No pretest information was provided. Thus, unlike the LE, Stein and Golomb study, the results of this study do not allow one to consider the relative effectiveness of the two programs. To make this judgment, one can only assess whether one type of program worked better for a particular type of student. The project did document that nearly all the young TMR participants demonstrated some capacity to profit from instruction. Few failed, but some students in both Distor and Rebus achieved more conventional reading programs. Using Lindo’s (1964) graphic technique for analysis of growth patterns, it was concluded that 20 of the 31 Distor students made Good Progress (65%) and the remaining 11 made poor progress. For the Rebus sample, 6 of the 23 (25%) were considered to be making Good Progress and 11 of the 23 (45%) were making poor progress. The remaining were considered “neutral.” Despite some confusion in methodology, this study uses teacher-collected progress data to document that reading can be taught to many of the moderately retarded participants with a reasonably high success rate. It suggests that Direct Instruction procedures with the 65 percent of the students who were successful for the whole-word approach are approximately lower, as might be expected in the case of the instruction of non-handicapped learners (Pfaff, Wallberg, Karggagne, & Rakus, 1981).

Discussion

A reasonably large number of studies have shown that DI and language programs consistently produce higher academic gains than traditional approaches in both mainstreamed settings (Gersten et al., 1981) and self-contained classrooms (e.g., Lloyd et al., 1981; Mags & Maroth, 1976) across a range of handicapping conditions. The LE, Stein and Golomb study indicated that some of the more subtle principles of theory, such as the instance of complete (rather than partial) mastery in each stage of the learning process, may be quite important for special education students. There is a clear need for further comparative research and norm-referenced evaluation of these programs across a greater range of handicapping conditions and academic areas of emphasis.

Several conceptual and related methodological issues need to be considered in future research of Direct Instruction. Millman (1981) recently stated, “Evaluative inquiry should raise questions, and provide answers to these questions (p. 85). The studies discussed in this review raise many subtle, important questions and issues. First and foremost is the need for increasingly precise definition and measurement of the independent variable. Direct Instruction is unclear from the studies reviewed in this paper whether the increases in performance were due to:

(a) the programs utilized, (b) the teacher behaviors called for in the programs, or (c) combinations of these factors. None of the studies actually assessed whether the programs were actually implemented as prescribed. The authors are rather vague in describing how the programs were adapted to meet the needs of the severely handicapped learners. Furthermore, with the exception of the LE, Stein and Golomb study (1981), relatively little was specified (let alone measured) in the comparison classrooms.

A related point of concern was instructional research, called instructional dimensions research (Lehrbach, Zigmond, & Gouri). Only three of the instructional studies (Cooley, 1978) can also identify important information about exactly which teaching procedures or aspects of the curriculum are most effective. For this type of study, observers look at a set of variables of interest—e.g., degree of structure, allocation of academic time, student engagement during lessons, student accuracy rate during lessons—in a large number of classrooms utilizing a range of instructional approaches. The researchers attempt to detect which variables, or combination of variables, are linked to academic gains. There is no need to select a comparison group; the design capitalizes on the natural variation which is everpresent in education. Therefore, these studies need not be bound by traditional achievement tests. As long as the same test is administered, classrooms, criterion-referenced tests tailored to the instructional programs actually used in the classroom can be used.

A recent study by Lehrbach, Zigmond, and Gouri (1981) on learning disabled students exemplifies this approach. The authors found that three of the behavioral factors were directly related to gains in reading—use of instructions, cognitive press (the degree to which the teacher focused the child on academic material), and teacher instruction (presentation of models, explanation, provision of feedback). All three are critical in definitions of Direct Instruction (e.g., Reith et al., 1981). This study is one of the first to demonstrate the importance of these behaviors in teaching handicapped students. Further explanation of the instructional behaviors conducted that look at more specific teacher behaviors, such as correction procedure, type of error, presentation rate, and the nature of the instructional formats. Such studies can contribute to identifying the core features of Direct Instruction.

Several other areas for future programmatic research are continuing formative evaluation. These researches have been conducted by Carmine (1981) and Close, Taylor, Larry, and Taylor (1982). Giovin and Brown (1983) have provided the following evaluation research: "designs are unlikely to be effective and confirmatory, but rather small and exploratory (p. 85)." It may now be clear that these small scale studies, only one instructional variable is manipulated. Several studies with handicapped subjects have isolated a single component of Direct Instruction as the independent variable. To date, research has shown the superiority of teaching sequences that separate the introduction of visually or auditorily similar material (such as "b-d" or "p-q") over those that attempt to introduce both members of the set at once (Carmine, 1981). White (1979) documented how teaching sequences designed for normal learners must be simplified and adapted for handicap learners, who are confused by too much variation in irrelevant stimulus features when learning a new geometric concept. Gersten et al. (in press) demonstrated that, when teaching language concepts to students with moderate and severely handicapped learners, dynamic presentations using manipulations of real objects are markedly superior to teaching language concepts to students with moderate and severely handicapped learners (Close et al. 1982) demonstrated that when teaching mildly retarded adults how to cash a check, learning was more efficient if the instructor used a correction procedure that provided the learner with an explicit strategy and immediate practice in applying the strategy.

Summary. Generally, a quite optimistic picture is emerging. In a recent review of research on Direct Instruction, Cotton and Savard (1983) concluded that:

Direct instruction, as that term is used to denote the agreed-upon set of teaching procedures, instructional sequence, or curriculum described earlier, is very effective for promoting basic skill development across a variety of subject areas. Teachers set and articulate learning goals, offer highly structured lessons, ask questions which are specific and narrow in scope, provide corrective feedback, and communicate affection and support to students, achievement results are superior to those obtained with other, less direct methods.

Distor programs are also very effective for instruction in low-ability children. Several studies have shown that children learning in the primary and upper elementary grades.

The next decade can provide increasingly clear specification regarding which components of DI are most critical for success with handicapped individuals, and it can tell us how precisely how programmatic principles and techniques should be adapted to meet the needs of this population.

References


Gersten, R., & Maggio, A. Teaching the general class student: A case-study of the implementation of a five-year project. Analysis and Intervention in Developmental Disabilities, in press.


Invalid Arguments  Continued from Page 3

ed together." After further questioning by the experimenter, the student was re-
quired to relate the two things that hap-
pened together in the passage to the following rule: Just because two things happened together, it doesn’t always mean that one causes the other. The stu-
dent would then respond to each item following the passage.

Workbook with Corrective Feedback.
Lessons for teaching each of the three critical reading skills to subjects in the Workbook with Corrective Feedback group were presented via three specially prepared workbooks, one for each category of invalid argument. These workbooks were designed according to the same instructional design principles as the Critical Reading Test and the Reading Test, with approximately the same number, kind, sequence and review of examples. The workbooks included explicit statements of the rule, and models of cor-
rectly solved exercises. The absence of teacher-made critiques and models differ-
tiated the Workbook and Systematic In-
struction treatments.

No Instruction Control. Instructional materials for the No Intervention group were in three workbooks from the Specific Skill Series—Book E (Boring, 1976). This is a supplemental reading comprehension workbook series com-
monly used in the intermediate grades. The tasks required in the three workbooks were vocabulary exercises in the typical “Fill in the Blank” format. They did not require use of any of the critical reading skills.

Except for the content of the workbooks, procedures for the Control group were identical to that of the Workbook group.

Dependent Measures

The major test developed for this study was the Critical Reading Test, a well-referenced test geared to the three categories taught. This instrument assess-
ed whether students could detect valid or invalid instances of an argument. Sub-
jects were not required to specify the parti-
cular rule the passage violated or to con-
clude the test. This was seen as the primary measure of the dependent variable since the tasks required in the test were similar to those taught and practiced by both the Workbook and Systematic Instruction with Corrective Feedback groups.

Supplemental Measures. Two other tests, Embedded Argument Analysis Test and Skill Classification Test, were developed to provide supplementary evidence on what subjects understood. In the Analysis Test, subjects were required to detect instances of invalid arguments and reasoning that were embedded in a passage of approximately 450 words.

On the Skill Classification Test sub-
jects were asked to recognize the specific category of invalid argument.

Results

The results are shown in Tables 1 and 2. On the major criterion measure, the Critical Reading Test, the Systematic In-
struction group performed significantly better than either the Workbook or No Intervention groups. No significant dif-
f erences were found between groups on the Embedded Argument Tests or the Skill Classification Test. However, while not significant, all differences favored the Systematic Instruction group.

The level of achievement of the Systematic Instruction group (86.2% ac-
curacy) reflects one of the basic com-
ponents of most systematic instructional procedures—teaching to mastery. The 58.3% and 56.9% of items correct for the Workbook with Corrective Feedback and No Intervention groups, respectively, indi-

cate levels of achievement well below the 80% success level suggested by thebrightness study by Spychy & Everson (1990) and Block (1960).

Another interesting outcome was that the standard deviations on the Critical Reading Test for the Systematic Instruction group was significantly lower than that of the Workbook (s = .05) or Control group (s = .05). It appears that, in this study, the Systematic Instruction method was more effective with the lower performing members in the group, thus decreasing the variability.

Table 2 shows the scores for each in-
valid argument on the Critical Reading

Table 1

<table>
<thead>
<tr>
<th>Group</th>
<th>M</th>
<th>Standard Deviation</th>
<th>SD</th>
<th>Percent Correct</th>
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</thead>
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<tr>
<td>Critical Reading Test (ID)*</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systematic Instruction</td>
<td>26.77</td>
<td>3.37</td>
<td>89.6</td>
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<td>Workbook</td>
<td>17.46</td>
<td>3.38</td>
<td>88.3</td>
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<td>No intervention</td>
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<td>6.51</td>
<td>57.8</td>
<td></td>
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<tr>
<td>Embedded Argument Test</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detection of Invalid Argument (S)</td>
<td>4.46</td>
<td>.88</td>
<td>80.2</td>
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<td>3.88</td>
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<td>70.8</td>
<td></td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Statement of Rule (S)</td>
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<td>.86</td>
<td>12.3</td>
<td></td>
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<tr>
<td>Workbook</td>
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<td>.65</td>
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<td></td>
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<tr>
<td>No intervention</td>
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<td>.65</td>
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<td>1.7</td>
<td>46.2</td>
<td></td>
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</table>

*Mandatory program. That sequence sets children up for rhyming as well as blend-
ing words.

2. When reading a word with them, follow these steps:
   a. Have them identify the individual sounds until they perform at a first-time-correct criterion for all the sounds in the word that is to be taught.
   b. Immediately present the word as an oral-blending task. If the word is oral-blending: "Bam.
   c. Immediately present the written word. Now do it here. Sound it. Get ready... Touch under each sound. Say it fast...Yes, what word? GOOD.

3. After children reach the criterion of being able to perform on three or four consecutive words, virtually without error, change the procedure by eliminating step b. If children make a mistake in identifying the word after sounding it out, use step b and c as a correction.

4. Present individual turns with some strong contingency associated with cor-
rect responses. Make sure that each child receives an opportunity to respond to the words that have been mastered by the group. Make a big fuss over all kids who perform well. Lavish praise on all of them, for individual test perform-
ance. Make comments to other teachers and students about how they are and how well they are doing.

By placing a strong contingency on individual performance, the teacher will shape the child's knowledge of what is expected of them. They will know that they are expected to remain and be able to initiate these skills. They will also know that there is a strong payoff associated with correct performance.

This issue is critical, and your com-
mitment to resolving it is commendable. Best wishes for success.

References


Dear Ziggy

Dear Ziggy,

We have encountered a problem in reading with blending. Some of our very few students seem to be able to say sounds in isolation, but they have trou-
ble changing from one sound to another in sounding out a word. The result is a break between sounds. Some of our students will then say a word that has nothing to do with the sounds they just said. They don’t understand that they should just say the sounds faster and faster until it becomes a word. I think these same students have gotten as far as they have by copying others in the group and faking it.

Recently, we are stuck with a few students who have learned to say each sound and then guess. Our strategy has been:

1. Practice oral blending.
2. Practice saying the sounds in isola-
tion and changing from sound to sound quickly (still holding continuous sounds) and
3. Having the students identify each sound in a word before sounding out. Then we have the students say the sounds faster and faster until they recognize the word. This procedure seems to help.

Do you have any idea?

Linda Campbell
School Psychologist
John F. Kennedy Center
Kalamazoo, MI.

Dear Linda,

Your three-step remedy is reasonable, except for the third step. Here’s why. It is based on an inappropriate analogy of "shaping." What is probably happening is that some kids are leading the others. Here’s an alternate way:

1. Bring the kids to a very hard criterion on oral blending. Use the se-
quence that is in the 80% Reading

Mastery program. That sequence sets children up for rhyming as well as blend-
ing words.

When reading a word with them, follow these steps:

a. Have them identify the individual sounds until they perform at a first-time-correct criterion for all the sounds in the word that is to be taught.

b. Immediately present the word as an oral-blending task. If the word is oral-blending: "Bam.”

c. Immediately present the written word. Now do it here. Sound it. Get ready... Touch under each sound. Say it fast...Yes, what word? GOOD.

3. After children reach the criterion of being able to perform on three or four consecutive words, virtually without error, change the procedure by eliminating step b. If children make a mistake in identifying the word after sounding it out, use step b and c as a correction.

4. Present individual turns with some strong contingency associated with cor-
rect responses. Make sure that each child receives an opportunity to respond to the words that have been mastered by the group. Make a big fuss over all kids who perform well. Lavish praise on all of them, for individual test perform-
ance. Make comments to other teachers and students about how they are and how well they are doing.

By placing a strong contingency on individual performance, the teacher will shape the child’s knowledge of what is expected of them. They will know that they are expected to remain and be able to initiate these skills. They will also know that there is a strong payoff associated with correct performance.

This issue is critical, and your com-
mitment to resolving it is commendable. Best wishes for success.

References


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