Corrective Reading Program Evaluated with Secondary Students in San Diego

By Marlene L. Campbell
San Diego State University
Reported by Wes Becker

This study used the original Corrective Reading Program (Englishmen; S. Becker, W. C. Carmine, L. Meyers, L. Becker, J. & Johnson, G., SRA, 1973) which was later revised and published as Decoding B of the 1978 Corrective Reading Series. The program provides for daily teacher presentations, group oral reading, silent reading practice, and dual oral checkouts to each student. The program has a building point system and dimming of progress.

The students selected for the study were seventh and eighth graders with reading levels on the Woodcock Reading Mastery Test (1972) more than one standard deviation below the mean. A non-equivalent control group consisted of students reading at least at the third grade level who were emotionally stable. They were placed in regular English classes. There were 13 subjects in the control group (6 reading at the third grade level, and 7 at the fourth grade level at the start). There were 42 experimental subjects (19 starting at the second grade level, 14 at the third grade level, and 9 at the fourth grade level). The small percentage of experimental subjects were in the program for a second year (e.g., as a seventh grade and an eighth grade). If pretests and posttests were available for each year, they were counted twice. The experimental group was 75% seventh graders and 65% boys, whereas the control group was more evenly divided. 79% of the experimental group and 62% of the control group were non-white. The classes were held in a junior high and a middle school in a minority neighborhood. Both were magnet schools where the principals encouraged the development of reading skills.

The individually administered Woodcock Reading Mastery Test was used to evaluate progress (in most cases Form A at pretest and Form B at posttest). The Woodcock gives a total Reading Score and five subscores: Letter Identification, Word Identification, Word Attack, Word Comprehension, and Paragraph Comprehension, and a Total Reading score.

The students were taught CRP for 30 minutes a day in resource room classes of 8 to 12 students. The teachers and aides received no special training in the use of the program. Checkouts were made by the teachers or aides within the first 30 minutes of class time. The students were also required to read six books of their choice each quarter and to give book reports to the class. CRP was not taught on book report days.

Results

Table 1 shows the gains by subgroups and total groups on the Woodcock Total Reading scores. The Corrective Reading groups did better than their comparison groups. Overall, there was a gain of 2.2 years in 9 months of instruction by students in CRP, and a gain of .4 months by students in English classes. The lowest performing group, subgroup A, gained 1.2 years in 10.1 months. Considering that these students had gained only 2 years in the last 7, this is an excellent change. It is likely that these low students also needed additional systematic phonics instruction (as provided in Decoding A) to make better progress. Subgroup B gained 2.4 years and subgroup C gained 3.4 years. The comparison groups gained .2 and .3 years respectively.

Table 2 breaks scores down by subgroup and shows tests for statistical significance. On each of the indices, except Word Identification, there is a highly significant difference. Gains occur for comprehension as well as decoding skills. Magnitude of the gains (with the exception of Word Identification) range from .5 to 7 standard deviation units for the CRP group. The maximum change for the control group was a little over .3 of a standard deviation unit. (Note: To express gains in standard deviation units, the standard score is divided by the standard deviation for the standard scores, which in this case is 10.)

Continued on Page 23

| Table 1 |
| Comparisons of Gains on the Woodcock Mastery Reading Test |
| | Months in Program | Grade Level Gain | Terminal Level | Standard Score Gain (SD = 10) |
| Groups | N | | | |
| I—Exper. | 42 | 9.0 | 2.2 | 5.0 |
| II—Control | 13 | 10.5 | .4 | 4.4 |

| Subgroups |
| A. Pretest—Grade 2 |
| I—Exper. | 19 | 10.2 | 1.2 | 3.7 | 4.8 |
| B—Pretest—Grade 3 |
| I—Exper. | 14 | 9.0 | 2.4 | 5.6 | 7.3 |
| II—Control | 6 | 10.8 | .2 | 3.6 | 5.3 |
| C. Pretest—Grade 4 |
| I—Exper. | 9 | 6.4 | 3.4 | 6.6 | 5.0 |
| II—Control | 7 | 10.1 | .5 | 4.0 | 1.4 |

At the Annual DI Conference every one works hard and learns a lot. It is a fun week to spend with others like yourself who want to be better at what they do in teaching. The faces of children at the end of the week and of course the content of the conference are interesting. Their eyes, their expressions, their pronunciation, and their reluctance to laugh out loud that they are very serious and somewhat intimidated. But by the end of the week, their faces and behavior have changed a lot. They are more relaxed and happy, and they realize they have been through a week of powerful learning. At the end of the Conference both trainers and participants feel renewed for the coming year. We have seen this happen again and again among ourselves and in those who join us at the Annual DI Conference.

We can't promise perfect weather, but we can promise great accommodations at the new Eugene Hilton and Conference Center, and a fun get-together picnic at the end of the first day. The guest rooms at the Hilton are great and the Conference facilities are the finest.

We will have some of the best trainers and leaders in the world working with Ziggy Gragg, Doug Carmine, Wes Becker, and others to put together an outstanding program of events such as Phyllis Haddox, Sue Hanner, Randy Sprick, Gary Johnson, Geoff Colvin, Lynne Anderson-Imann, Stan Paine, et c., et c., etc. We will provide the best Conference we can design, and our focus will be on providing you with the most information and practice that can be communicated in five days. You will work hard, but it's worth it.

If you haven't attended one of our conferences, give it some serious thought. The Eugene area is gorgeous—close to the ocean, the Redwoods, Crater Lake, and the Cascade Mountains. Fern Ridge Lake is 10 miles away for boating and swimming. The Willamette River runs through town and is used for rafting and kayaking. Outdoor sports abound. The new Hult Center for the Performing Arts is adjacent to the Hilton and provides a wide variety of outstanding performances during your stay. By doubling up at the Hilton, your cost can be only $22 a night.

If your district cannot support your training, remember that for most of you it can be as a paid attendance and a professional expense. So consider combining the Conference with a low cost vacation. Seed in your Conference application form soon to insure you get the sessions you want. See you in Eugene in August!
Dear Editor:

You and your DI group deserve a big THANKS. In my Basic Skills Resource Room, I am using your Direct Reading, Mastery Spelling, and now Expressive Writing. It is terrific. Here’s an endorsement I want to share with you.

Scene: Faculty Lunch Room (Crowded—including principal.

Regular Ed. Teacher: (To me, loud and clear) “Hey, Bernie, we did paragraphs today and your kids did better than my regular ed. kids!”

Boy, was I floating.

Thanks again for a great book. I hope Level II will come out this summer. Or do you want me to write a follow-up?

Very truly yours,

Bernice Senti-Flahous (Mrs.)
Special Education, Basic Skills
Evergreen School District
Vancouver, Washington

Ed. Note: The thanks should go to Ziggy Engelmann! And yes, Level II is on the way.

To the Editor:

In the last issue, (Winter 85-86), it is obvious in our article, on Sequencing Examples in Discrimination Learning, there was an error in the results section. It should read: “The average percent right for the arranged sequence group was only 11 percentage points higher than the Random group on the Maintenance test” instead of 11 percentage points higher. The difference was 11 percentage points on the posttest. The implication we drew from this dramatic drop was that one cannot expect that new learning will be maintained by severely handicapped individuals unless the teacher programs in review sessions. Thank you.

Russell Gersten

The Direct Instruction News is published Fall, Winter, Spring and Summer, and is distributed by mail to members of the Association for Direct Instruction. Readers are invited to submit articles for publication relating to DI. Send nominations to: The Association for Direct Instruction, P.O. Box 10252, Eugene, Oregon 97440. Copyrighted by ADI, 1984.

The DI Teacher Named Idaho Teacher of the Year

Idaho’s Teacher of the Year for 1983-84 is Victoria (Vicky) Roper, Special Education Teacher at Wendell Elementary School in Wendell, Idaho. Ms. Roper was nominated for the award by the parents of one of her students because they were impressed with the progress that their child had made in Vicky’s classroom. Vicky combines effective teaching techniques with a supportive manner to motivate students to succeed in her self-contained classroom.

The Association of Direct Instruction, AIDI, has attended conferences in Eugene and used a variety of direct instruction programs. This year, she and her aide are teaching Direct Instruction, Arithmetic I, Corrective Reading Decoding & Directive Mathematics, Spelling Mastery, Cursive Writing, and Time-Telling. Vicky has also used Direct Language 1, modified with sign language for hearing-impaired students. She works closely with regular classroom teachers to promote interaction between regular and special education.

Vicky gives much of herself when working with her students. She serves as a Special Olympics coach, trainer, and fund-raiser. Spending considerable amounts of time helping her students achieve the confidence and abilities to participate. The Association for Direct Instruction would like to extend its congratulations to this enthusiastic, dedicated and well-trained professional.

Call for Award Nominations

The Board of Directors of the Association for Direct Instruction is seeking nominations in four categories for the 1984 ADI Awards for Excellence in Education. Each year, ADI honors individuals who have distinguished themselves in educational excellence in one of four categories: (1) elementary teaching; (2) secondary teaching; (3) school administration; or (4) teacher training and research. Last year’s honorees were: Karen Roberts, Eugene, Oregon; Nancy Woolfson, Eugene, Oregon; Tama Rosen, Olympia, Washington; and Alex Magee, Sydney, Australia, respectively.

The awards seek to recognize those who have distinguished themselves by their continuing commitment to excellence in education for all students. Through this recognition, the ADI Board seeks to illustrate to others what can be accomplished when commitment and Direct Instruction technology are put together.

Honor nominees are selected by the ADI Board of Directors from Among outstanding nominations submitted to them. You may nominate candidates in any one or the four categories. NOMINATIONS MUST BE RECEIVED BY JULY 1, 1984. Send letters of nomination to ADI BOARD (HONORS), P.O. Box 10252, Eugene, OR 97440. In your letter, document your nomination and submit as many letters as you can. We request that your contact us for any additional information if needed.

Many more capable and deserving persons will be nominated than can be recognized this year. However, we welcome all nominations.

ADI Financial Report - 1983

During the year 1983, The Association for Direct Instruction had a total income of $169,999.81 and expenses of $161,783.83. This gave a net income of $8,236.18. About $6,000 of this was obligated to support the handicapped preschool and the rest for the Spring and Summer issues of DI News. The San Diego and Eugene conferences produced a net gain of $29,727.22 on income of nearly $40,000. Memberships and subscriptions brought in $10,099.50 and book sales nearly $14,000. Expenses in this area (books and DI News) exceeded costs by $621, but we have an inventory valued at about $7500, so we remain about $6900 ahead on publications ($4,400 of inventory was carried over from 1982). The handicapped preschool and the 4th summer school are essentially break even operations. The Association thus remains financially stable.

1983 Income & Expense Summary

INCOME
Memberships and subscriptions $10,099.50
Subscriptions only — 276 International M & S – 40
Book sales $23,973.67
Advertising $494.00
Interest $485.00
Conference fees $39,830.00
Handicapped Preschool (State Funds) $49,875.84
Handicapped Prewriting Other $2,043.00
Eugene & District Summer School $4,780.00
Total Income $169,999.81

EXPENSES
Costs of Books and DI News $24,928.08
Overhead $699.03
Conference expenses $36,008.59
Preschool expenses $85,716.97
State Education $24,000.00
Eugene & District Summer School $4,780.00
Total EXPENSES $163,763.03

NET INCOME FOR 1983 $6,236.18
Using Corrective Reading with Adults

By Cynthia M. Herr
Lancaster Community College
Eugene, OR

While the Corrective Reading Program was originally written for use in grades four through twelve, it is equally effective for use within the classroom with non-readers or who read at a very low level. I began using Corrective Reading with adults when I started teaching in the Study Skills Learning Center at Lancaster Community College in 1978. The Study Skills Learning Center offers developmental courses in language arts for students who are enrolled at Lancaster Community College. Some of the students are enrolled in vocational courses; some are pursuing academic degrees. Students range in age from young adulthood to middle-aged. Among the courses offered in the Study Skills Learning Center are several classes designed to provide intensive remedial work in reading, writing, and spelling. These Read, Write, Spell classes, as they are called, require the students to attend class 10 hours per week. This is approximately twice the class time required for most courses at the college. There are three levels of Read, Write, Spell classes: Level 1, for students who read at least at a fifth-grade level, as measured on the Wide Range Achievement Test; Level 2 is the second level for students whose reading levels fall between the fifth and seventh-grade levels, and the third level is for students whose reading levels are above the seventh-grade level. Enrollment in any of these classes is by instructor permission only, and all students are tested on the WRAT before being allowed to register for one of the classes. As a matter of department policy, standardized test data are recorded by instructors for all classes offered in the Study Skills Learning Center. The maximum enrollment for the lowest level class is 32 students. For the other two levels, it is 15 students. A classroom aide is assigned to assist the instructor of the lowest level class during the ten hours of weekly class time.

I taught the lowest level Read, Write, Spell class for two semesters, spring 1979 and spring 1982. During this time, I used Corrective Reading as the primary reading curriculum. I did not use the WRAT, the Nelson Reading Test (a timed test of vocabulary and comprehension) or a reading test. Many students take a Read, Write, Spell class for only one or two terms. But during the three years that I taught the class, three students enrolled in my class for several consecutive terms. This enabled me to gather long-term data on their reading progress. I have also had contact with each of the three students over the last five years. Although I do not have test scores on their current reading levels, I do know that all three students have continued their education programs to some degree. The purpose of this article is to describe the use of Corrective Reading Programs with these three adults and to present the data on their progress during the time they were enrolled in the Read, Write, Spell classes.

For the most part I used the Corrective Reading Program in the same manner as I use it with non-readers and high school age students previously.

Each student was given the placement test and assigned to either Decoding B or Decoding C. In the cases of these three students, who shall be referred to as W., D., and M., each student was given a Corrective Reading in Decoding B, lesson 1. Since the Read, Write, Spell class met for two hours each day, I was able to divide the class of 10-12 students into two skill groups which met with me for a Corrective Reading lesson for 45-60 minutes a day. During the other hour of class time, the students worked with other adults. During this time, the role did not include readings with the students, taught a spelling lesson, and assisted the students in their independent seat work.

Initially, I covered only one Corrective Reading lesson a day with each group. The lessons were taught according to the program manuals. One of the most critical aspects of teaching reading to adults who are reading at a very low level is having the students read aloud. Unfortunately, this is the aspect of teaching reading which is most often excluded in teaching adults, primarily because instructors are afraid that adults will be too embarrassed to read aloud. During the first week of class, my students were shy about reading in front of other students. I made a conscious effort to reassure them by explaining to them why it was critical for them to read aloud, and I assured them that no one would judge them if they made mistakes. We closed the door to our classroom to facilitate privacy, and the rule about laughing at mistakes was strictly enforced. I never once had a student refuse to read aloud under these circumstances. The students received considerable positive reinforcement, and they were soon quite comfortable about reading aloud in class. One of the nicest benefits of having the students read aloud in each other’s presence was that each student quickly realized that his/her reading problem was not unique. The students developed into a very close-knit, supportive group and encouraged each other to continue throughout whenever one of the group members began discouraged.

For most of Decoding B, I covered one lesson a day. I found that adult readers with few decoding skills take as long to master beginning reading skills as do children who are just learning to read. However, once these students had successfully mastered most of Decoding B, I noticed that their learning rates accelerated more quickly. I was able to do twice the lesson in class plus the chalk-board work for the next lesson and assign the second story for homework. The class aide and I would then check the students the next day. The students’ error rates did not increase with this accelerated pace. I also found that most of the adults I taught had little trouble comprehending the Corrective Reading stories as long as they were decoding them accurately. Because of their receptive language, which for most students was quite good, they had little trouble with the vocabulary in the stories. This also made it possible to cover Decoding C at an accelerated pace. Except for their greater expressive and receptive language abilities, these adult learners were very similar to the standardized ‘tenth-grade’ adults in the study of students reading in the third-grade level. I found that teaching adults reading beginning skills was very similar to teaching children beginning reading skills.

Oftentimes I have been asked whether these adults objected to the content of the Corrective Reading stories. They did not object. Sometimes they joked about how silly some of the fictional stories were, but all of them were more concerned about their reading progress than they were about the content of what they read. With Corrective Reading, their progress became evident to them more quickly than when they were working on passages in the five terms that I was in my Read, Write, Spell class. He learned new skills rapidly and in two terms went from being my lowest student to being the most capable student in my December 1982 class. He was one of the best examples of what a very motivated student of normal ability can accomplish when taught by a properly trained instructor.

The case histories of the three students demonstrate the kind of reading progress adults can make when they are taught with a well-structured, carefully sequenced reading program like Corrective Reading. The test scores for these three students, W., D., and M., are presented in Tables 1 and 2. In addition to these three students, the Corrective Reading mastery tests at the appropriate times in the program. Although Tables 1 and 2 show pretest and posttest scores for each term, the posttest score for most terms is the pretest score from the previous term. In many cases there was only a few weeks’ time between the end of one term and the beginning of a new term. It would have been inappropriate to have test scores on standardized tests within just a few weeks’ time.

Student W. entered the Read, Write, Spell class fall term, 1979. At that time, W. was in his mid-twenties. He had attended school only until he was thirteen, at which time he left home and traveled around the United States. At various times in his life he had been enrolled in government funded training programs, but when he dropped out of high school, he had always eventually dropped out of such programs. When he entered the Study Skills Learning Center he was the only student on his reading test on the WRAT was a 1.9 grade equivalent. He knew some sight words and had some “b” sound at the 3.9 grade level, but his reading was an estimated 1.9 grade level. W. made some progress during the first year and a half of study, gaining 2.8 grade levels. W. was then asked to leave the program because he was unable to pay tuition. He did not return until the spring term of 1981 when he was asked to return to the program.

EAST COAST DIRECT INSTRUCTION SUMMER CONFERENCE

DATES:
August 13-15, 1984
LOCATION:
Newark, Delaware
CREDIT:
College credit through the University of Delaware

CONFERENCE SESSIONS

Corrective Reading Decoding (remedial 4-13)
Corrective Reading Comprehension (remedial 4-13)
Reading Mastery, Level 1 (primary)
Reading Mastery, Level 2 (primary)
Reading Mastery, Levels 3-4 (primary and intermediate)
Dynam Math (primary)
Morphological Spelling (remedial 4-13)
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2600 Pennsylvania Avenue
Wilmington, Delaware 19806

DIRECT INSTRUCTION NEWS, SPRING 1984

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consistent and slower. D is probably the most severely learning disabled student I have taught in 12 years of teaching. D had almost no decoding skills when he entered my class as a young man in his middle twenties. He had earned a high school diploma, but had not mastered the skills normally associated with that degree. I started D in Decoding B, and he made slow but steady progress over the next three terms. Tables 1 and 2 show that his test scores on the WRAT and the Nelson increased gradually that year. As is characteristic of many learning disabled students, D often appeared to have mastered a skill one day only to have forgotten it the next day. This was painfully obvious when I tested D in September, 1983, after a summer in which he had no reading instruction. His reading level and skill regressed to almost the level at which he had begun the year before. D repeated Decoding B that Fall and Winter terms. His progress the second time through the program was faster, and he retained skills more easily. He began Decoding C Spring term, 1982. As his increased ability to retain new skills, D’s test scores the following term fall show no improvement, indicating that he was without instruction. D continued to make steady progress in Decoding C through the 1982-83 school year. He completed Decoding C, and unfortunately, due to a serious illness, he did not complete the last week of school and was not present for the posttesting. D left Oregon and I did not hear from him again for two years. However, he appeared in my office just a few weeks ago. He had come back to get his educational records because he is applying to the University of Washington to complete an art degree. He intends to enroll in their special reading program while he is there. According to D, he is reading regularly and he believes that his reading skills have continued to improve. I believe that if D had not had three continuous years of direct instruction in reading, he would still be reading at a second-grade level. His learning disability is so severe that without the continual repetition of the decoding skills, he would quickly forget them. Had D been in a program that was not flexible enough to treat him in the same class, although not the same material each term, nine times, he would never have had the number of repetitions of each skill that he needed in order to retain those skills. D is a testament to the fact that truly learning disabled children do not outgrow their disability when they become adults. Learning will probably never be easy for D, but with good teaching he can learn and retain what he learns.

Student M. A woman in her early for-
ties, entered my class Fall term, 1980. Because of her sight word reading skills, she was placed in the Decoding B level in the WRAT. However, I started her in Decoding B because she had few decoding skills. M. made good progress that term, but at the end of the term, she moved out-of-state. She returned to the college the following Fall term. She had lost much of what she had learned in that term. Her motivation level was much higher than before, and she was able to complete Decoding B and Decoding C in the next three terms. In just nine months, M.’s reading score on the WRAT improved 2 years and 6 mon-
ths. M. continued on in the next level in Reading, Write, Spell class for one more term, and then she quit school to sup-
port her family. Probably the most im-
pressive fact about M.’s experience in the Read, Write, Spell class, besides her reading progress, is that she was able to intervene on her son’s behalf when she realized that he was not learning to read in first grade. She knew enough about her own reading problems to recognize that her son was being taught with a sight-word method which was teaching him no decoding skills. Because she was able to judge that the reading program was not appropriate for him, she was able to work with his school to get him into a District program in which he did very well. I don’t know if M. has con-
tinued to read very much since she left the Read, Write, Spell class, but I do know that she is successfully supporting her family, and she is keeping a very close watch on her son’s progress in school.

I believe that the experience of these students shows that Corrective Reading is just as effective a program for adults as it is for children and teenagers. Adult non-readers need to be taught just as carefully with a program that stresses decoding skills as do children who are first learning to read. The material con-
tent of the program is far less important than many teachers believe. The stories do not have to be relevant to an adult’s life. The critical factors to consider in choosing a program for non-readers, whether children or adult, are how carefully the skills are sequenced and taught and how much repetition of those skills is provided. The Corrective Reading Program meets these criteria as few other programs do.

**Table 1**

| WRAT Reading Scores (Pretest/Posttest) (Grade Equivalent Scores) |
|-------------------|----------------|----------------|----------------|----------------|
| **Student**      | Fall  | Winter | Spring | Fall  | Winter | Spring | Fall  | Winter | Spring |
| **Score**        | 1.9   | 2.7   | 3.2   | 3.0   | 4.1   | 4.0   | 3.7   | 4.1   | 4.0   |
| **Grade**        | 3.5   | 4.1   | 4.1   | 3.5   | 4.1   | 4.1   | 3.5   | 4.1   | 4.1   |
| **Score**        | 3.5   | 4.1   | 4.1   | 3.5   | 4.1   | 4.1   | 3.5   | 4.1   | 4.1   |

**Table 2**

| Nelson—Total Reading Scores (Pretest/Posttest) (Grade Equivalent Scores) |
|-------------------|----------------|----------------|----------------|----------------|
| **Student**      | Fall  | Winter | Spring | Fall  | Winter | Spring | Fall  | Winter | Spring |
| **Score**        | 2.2   | 2.1   | 2.3   | 2.1   | 2.3   | 2.1   | 2.3   | 2.1   | 2.3   |
| **Grade**        | 3.0   | 3.0   | 3.5   | 3.5   | 3.0   | 3.5   | 3.0   | 3.5   | 3.0   |
| **Score**        | 2.5   | 2.6   | 2.5   | 2.6   | 2.5   | 2.6   | 2.5   | 2.6   | 2.5   |
| **Grade**        | 3.5   | 3.0   | 3.5   | 3.0   | 3.5   | 3.0   | 3.5   | 3.0   | 3.5   |

**Tutoring Methods:**

By Charles R. Greenwood, Debra Whorton, and Joseph C. Delquadri

Juniper Gardens Children’s Project, Bureau of Child Research
University of Kansas

**Part I: Overview of Procedures**

This article reports tutoring methods developed at the Juniper Gardens Children’s Project in Kansas City, Kan-
sas. The Project is a community-based research program that has worked cooperatively within the Kansas City
Kanas Public Schools since 1965. In 1979, we began a line of research focusing on factors related to effective in-
struction. Perhaps the most unique con-
tribution of our work has been the development of the concept of “opportu-
tunity to respond”—defined as the in-
teraction between instruction (the teacher, the materials, the task, the signals to respond) and student response (reading, writing, pointing, etc.). The opportunity to respond” is its departure from prior thinking which relied primarily upon consequ-
es to motivate students. In “opportu-
ty to respond”, the quality and fre-
quency of instruction and student re-
activity are equally important in promoting high levels of student academic performance (Greenwood, Sherret, & Stall, 1983).

**Methods that Engage High Levels of Responding**

What are the methods that increase “opportunity to respond” and maintain

Crepaz of the classwide and whole-class tutoring materials can be obtained from Dr. Joseph Delquadri, Juniper Gardens Children’s Project, 1987.

**Tutoring Models at Juniper Gardens**

Tutoring models are a general class of models that are used to increase the quality and frequency of academic interaction. Contrary to the general view of tutoring methods as ap-
propriate only for “remediation”, we argue that tutoring methods can be designed and used successfully as a serious instructional methodology within various curricula for all children in a classroom. These methods also have the same characteristics as those just described (e.g., high levels of opportuni-
ty, immediate error correction, frequent testing, etc.), and these similarities will be pointed out. The three classes of treatment interventions have been (a) classwide peer tutoring, (b) parent/home tutoring, and (c) single peer dyads. Each of these interventions are school based procedures, and the second occurs in the home.

Classwide peer tutoring. This method involves pairing students who work cooperatively together, one as tutor, and the other as a student. The class is involved for the entire session. Half-way through the session, pairs switch roles. The tutor becomes the tutor and vice-versa.

Depending upon the subject matter content (e.g., oral reading, spelling, arithmetic, etc.) tutors prompt the tutor to respond by dictating a spelling word for the tutor to write, an equation to solve, or to listen to the tutor read a sentence from a reader. The tutor answers points for correct tutor response. If an error occurs, the tutor uses a correct correction procedure wherein the tutee practices the correct response. Points are intermittently awarded to tutees by the teacher for successfully making these corrections. Typical sessions are thirty-
minutes long.

Each pair of students is reassigned to a team. At the end of a tutoring session, students add points that each has earned and individual points are tallied and
Increasing Opportunity to Respond & Achieve

summed to form team totals. Winning teams are determined each day and on a weekly basis.

Class-wide peer tutoring has been used for both major instructional purposes and as a supportive co-curricular activity. The major advantage of the class-wide technique is that it assures that all children engage in the behavior and attend to it so high rates during this session.

Home/parent tutoring. The home/parent tutoring procedures are generally the same as those used in the class-wide procedure, but the parent is the tutor. In this case, the child is assigned to a home/school pair, and the home/ school form sent home by the teacher. The parent then serves as the tutor, and on a regular basis, sends back a report to the teacher. The parent is then assigned to a new child at the end of this process. The parents are expected to make the tutoring sessions regular, and to make sure that they occur at least once a week.

Single peer dyads. The same tutoring procedures can be used to individualize a particular student's program. In this case, the teacher or psychologist is the tutor, and the student is assigned to a specific tutor. The tutor is responsible for assigning the student to a specific task, and for monitoring the student's progress. The tutor is also responsible for providing feedback to the student, and for helping the student to achieve the goals set for the tutoring session.

Debra Whorton, Charles Greenwood, Joseph Delquadri
A Program for Success,
Reading Mastery, Levels 1-6

Learning Initial Skills
Reading Mastery (Dizar Reading) I & II uses a proven phonics method that features step-by-step instruction for all decoding skills.
- Fast and efficient teaching of all beginning reading skills
- Systematic introduction of letters and sounds
- Work attack strategies that allow students to decode thousands of new words
- Oral and written exercises teach basic comprehension

Building New Skills
Reading Mastery Levels III & IV teach students the skills needed to read for information in content area textbooks.
- Vocabulary and fluency are built continuously
- Complex sentence forms are introduced gradually
- Informational text provides the background knowledge needed for comprehension and shows students how to use that knowledge
- Comprehension skills are applied to a variety of contexts

Mastering Advanced Skills
Reading Mastery V and VI prepare students for the challenges of adult reading. These levels feature classic stories and novels of established literacy value.
- Extensive independent reading
- Careful teaching of inference and reasoning
- Development of critical reading skills through analysis and interpretation
- Proficiency in reference and writing skills

Reading Mastery Fast Cycle I/II is an accelerated beginning reading program. Fast Cycle provides a one-year program which teaches all the basic skills taught in Reading Mastery: Dizar I and II.
- Students decode more than 1100 regularly spelled words plus more than 200 irregular words
- Comprehension skills are part of every daily lesson
- Spelling lessons accompany the reading program
- Mastery tests are part of the new Fast Cycle program

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6 DIRECT INSTRUCTION NEWS, SPRING, 1984
also sufficiently well developed that peers and parents can easily learn to use them.

Our procedures, when systematically used, solve many of the traditional problems of tutoring over long periods. As a result, the students will be interested in the tutoring process, which will in turn improve the students' academic performance.

Most important is the fact that these techniques can be established and maintained in a way that does not require a significant investment of time or effort.

Part II: Research Findings

In 1979, we shifted the focus of our research in classrooms from reinforcement contingencies and motivational variables to additional factors related to effective instruction. This shift caused a shift in the view of students as subjects rather than producers.

We found that over 20% of the students in our study did not respond to the tutors.

An additional 20% of the students did not respond to the tutors.

In one study, we found that students who had been tutored showed a significant increase in academic performance.

In another study, students who had been tutored showed a significant increase in academic performance.

In a third study, students who had been tutored showed a significant increase in academic performance.

In a fourth study, students who had been tutored showed a significant increase in academic performance.

It should be clear that a major problem confronting teachers is the selection of instructional methods that will maximize student academic engagement. As we operationalize it.

Research on Tutoring

An instructional method in which students are taught to read with the help of a tutor was studied. This method was compared to a traditional method of reading instruction.

Students who were tutored showed a significant increase in reading comprehension.

It is also clear that the use of this method is effective in improving reading skills.

Several studies have demonstrated in comparative studies with other educational programs that this class-wide peer tutoring increases the proportion of students who are engaged in reading, writing, and academic talk.

This method was effective in increasing the proportion of students who were engaged in reading, writing, and academic talk.

The importance of this finding cannot be overstated, especially when we consider that these results were achieved in a classroom context with limited resources.

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Minimal Differences & Analytic Assistance During

By Doug Carnine
University of Oregon

Craig Darch
Ron Eaves
Auburn University

Fred Hoffman
Lori Wisconsin Public Schools

Phyllis Tamarro
University of Oregon

Two recent lines of research have important implications for learning disabled students' ability to use learning strategies: one involves selective attention deficits, a student's ability to attend to the relevant part of a teaching presentation; (1) the selection and sequence of positive negative examples, which requires appropriate cognitive functioning; (2) analytic assistance during concept learning, which assumes appropriate cognitive functioning.

The purpose of the first experiment was to determine the effect of including minimally different positive and negative examples in a concept teaching set. Subjects were randomly assigned to one of two training groups. Group 1 was trained with positive and negative examples that differed along one dimension. Group 2 received the same number of examples, but positive and negative examples differed along two additional dimensions. Group 3 also received the same number of examples, but the positive and negative examples differed along one more dimension. Experiment 2 looked at the degree to which LD students benefit from analytic assistance when learning to draw inferences. As was the case for Experiment 1, a determination that LD students do not benefit from analytic assistance could set the stage for instructional interventions designed to compensate for metacognitive deficits. To increase the representativeness of the results, both Experiment 1 and Experiment 2 included an experimental group of LD students and a control group of NE students in a different part of the country.

Experiment 1

Study 1

Method

The four-year learning disabled children from the third, fourth, fifth, and sixth grades were selected from two elementary school resource rooms in the Pacific Northwest and randomly assigned within each grade level to three experimental conditions, each with eleven members. The mean ages for the groups were 11.2, 11.1 and 11.4. All of the children were certified by the school district as learning disabled (normal IQ), and a severe discrepancy between academic achievement and actual achievement except for one sixth grade boy who was labeled as emotionally handicapped. Training and testing was conducted with individual children in a separate part of the resource room.

Materials

Training materials for the three groups consisted of three 8 X 11 sheets with line drawings of one positive and one negative example. The differences between positive and negative examples systematically increased across the three groups. For the minimal difference group, the only difference between the positive and negative instances was that the negative instance was raised an inch above the horizontal line; all other features of positive and negative were held constant. (See Figure 1 for a pair of examples from each treatment.) For the intermediate difference group, the magnitude of the difference between positive and negative instances was increased; in 5° the horizontal line, rotating each negative instance ninety degrees, and removing the hand from the positive examples. In the maximal difference group, a third difference was added to the pairs presented by using illustrations of different objects for the negative examples. A 12-trial test group consisted of the various levels of negative examples defined by objects (apple, cup, and hat) other than those used in training (rectangle, and football), and placed in a full range of positions, distances from the base between 1° and 5°. The positive and negative examples were sometimes rotated ninety degrees from the orientation presented during training, and the hand was removed from all test examples. Each example was presented singly on 8 X 11" paper.

Procedure

Positive examples were called "flot." Each of the three experimental groups received two training trials on each of the three sheets in which the experimenter pointed to the positive instance and said "This is flot!" If the child responded incorrectly either to the positive or negative example, the experimenter repeated the presentation until the child responded correctly. As soon as the six training trials were completed, the child was immediately given the 12-item transfer test. The experimenter pointed to the "flot" picture and said "You can fly. This is flot!" The experimenter paused five seconds (maximum) or until a response occurred, then asked the child to draw the picture. No feedback was given to the child during the transfer test.

Results

The minimal difference group had the highest mean score, 10.2 (SD = 1.9). The mean scores for the intermediate difference group (8.3 with a SD of 2.8) and the maximal difference group (7.7 with a SD of 3.3) were similar. None of the differences between groups was significant.

Replication

Subjects and Setting

The subjects for this study were 30 third, fourth, fifth, and sixth grade learning disabled students. All students had previously been placed into the learning disabilities classroom, according to state guidelines which included at least normal intelligence with a measured severe discrepancy between expected and actual achievement. Training took place in a midwestern town in central Oregon. All experimental procedures replicated those used in study 1.

Results

The maximal difference group had the highest mean correct, 6.0 with a standard deviation of 2.7. The other two groups had almost identical mean scores: the minimal difference group, 7.4, (SD = 2.8), and the other group, 7.3 (SD = 1.5). A one-way analysis of variance revealed no significant differences between the groups on their mean number of correct responses on the transfer test.

Discussion

The results of Experiment 1 indicate that including minimally different positive and negative examples does not facilitate LD students' concept acquisition. In contrast, Carnine (1980) demonstrated that when non-handicapped students received similar training, the minimal difference group made significantly more correct responses than both other groups and the intermediate difference group made significantly more correct responses than the maximal difference group. Limiting stimulus variation by presenting only minimally different positive and negative examples seems to increase the saliency of relevant concept dimensions for young non-handicapped students. The hypothetical attention deficits of LD students (Ross, 1980) may diminish the saliency of a relevant concept dimension even when stimulus variation is limited. The results from Experiment 1 might evoke two types of responses: (1) our understanding of the differences between LD and non-handicapped students has been refined, (2) procedures for concept teaching will have to be modified when applied to LD students. The first reaction, by itself, can lead to conclusions that lack constructive instructional implications. For example, because LD students exhibit selective attention deficits, teaching sequences that initially use minimally different pairs of positives and negatives may actually be of no value in helping these students identify relevant concept dimensions. In the case of the in- tarnation of positive and negative examples that are minimally different may be the same, the former, make conflict students. Simply put, example sequencing is not important because of the inability of LD students to focus attention on the relevant concept feature. The work by Dykman, Ackerman, Clemens, and Peters (1971) supports this analysis. These authors have shown that difficulty in focusing attention was a major characteristic of groups of learning disabled boys and normal controls. In a related study (Sykes, Douglas, Weiss, & Mils, 1973), however, children were shown to be less able to detect the significant stimuli and made more incorrect responses to irrelevant stimuli as well as children of normal control status. The negative results of the study may be due to a lack of careful training concerning the stimulus items. Further, for LD students to benefit from concept instruction procedures like minimally different examples, the students may need to be taught a strategy to use during training. For example, a teacher might teach students to attend to the relevant features of a stimulus by having the students name or point to features along which the examples are the same and are different. This identification might increase the students' attention to the various dimensions and to the fact that examples like this one could be coupled with more generic procedures like repetition, rehearsal, guided practice, and reinforcement for improving the attentional abilities of these students (Ross, 1980).

Experiment 2

Study 1

The second experiment was designed to determine the effect of analytic ability on LD students to benefit from strategy training, a procedure found to be effective for non-handicapped students (Ross & Carnine, 1982). Students were trained with either an examples-plus-definition or an examples-plus-strategy training. If the LD subjects failed to perform at a higher level in the strategy group, support would be given to the notion that LD students may not benefit from strategy training until they have had intensive remedial instruction in learning and applying strategies. As was the case with Experiment 1, two studies were implemented in the initial phase replication.

Subjects and Setting

Subjects were third, fourth, fifth, and sixth grade learning disabled students of LD resource rooms in the Pacific Northwest.
Concept – Acquisition Instruction with LD Students

All of the children were identified as learning disabled by state and federal guidelines that included: (1) normal IQ and (2) a severe discrepancy between academic potential and actual academic achievement.

Students from each grade were randomly assigned to one of the test conditions: (a) Examples Plus Definition, and (b) Examples Plus Strategy Questions. The experimenter met with the students individually in a quiet area, part of the resource room that had a table and two chairs.

Training Task

The sequence shows the sequence of demonstration and test items used for all students. The definition plus examples group had this definition printed above the example sequence: "A binary duality is the answer you get when you multiply two numbers. One of the numbers you multiply must be exactly two more than the other number." For example, 5 × 6 is not a binary duality because six is not two more than five. In contrast, 4 × 6 + 24 is a binary duality because six is two more than four.

Transfer Test

Two related concepts were used in a paper and pencil task to measure transfer of the initial concept learning. The testing items had nothing specifically to do with the binary duality concept, but did require the students to use similar analysis procedures to acquire concepts. The transfer concepts, illustrated by the demonstration items shown in Table 2, were developed by varying the operation (transfer concept B, used addition rather than multiplication), and the numerical relations involved (in transfer concept A, the numbers differed by one rather than two). Four demonstration items for each concept were followed by ten test items, yielding a total possible transfer score of 20.

Procedure

Training phase. The experimenter explained to each student that the purpose of the experiment was to "find out more about how people learn about new things" and that if the instruction did not affect their grades in the classroom. The experimenter presented one of the two conditions.

1. Definition. The definition was read aloud, first by the experimenter, and then by the student. The items were modeled and tested. "My turn. Five times six is 30. Is a binary duality? No, it is not." And corrections included reference to the definition through oral re-reading.

2. Strategy training. Modeling and testing procedures followed this format: "Six times five is 30. Is a binary duality? No. How do you know? (Because 6 is not exactly two more than 5.)" The student was given feedback on each answer with the experimenter modelling the correct answer in response to errors.

For all groups, the testing procedure continued until the last item had been attempted or until the criteria of five consecutive correct answers was met. If the student failed to complete the entire test, the testing procedure was stopped and no data were recorded.

Transfer phase. The written transfer test was immediately given after the child had reached criterion. The test was introduced by the experimenter who read the directions aloud and pointed out that the students should look very carefully at the first four sample items which had the correct answers (yes or no) circled. Students were not allowed to see clarification. They were given as much time as needed. If the child refused to complete the transfer test, the experimenter got up and walked away for five minutes. If on returning, the child still had not completed any items, the child was asked to hand in the test and was told that he/she could return to class.

Results

The mean trials to criterion and mean percent on the transfer test for the definition and strategy treatments appear in Table 5. A 2 × 2 ANOVA (Treatment by grade level) on trials to criterion revealed a significant treatment effect, F(1, 27) = 2.53, p = .02. Transfer differences were not significant.

Replication

Subjects and Setting

The subjects for the replication were 24 third, fourth, fifth, and sixth grade learning disabled students who had been formally placed into the LD classroom for instruction in academic areas. All students had been previously identified as learning disabled by school personnel according to state guidelines, including normal intelligence and a significant discrepancy between expected and actual achievement levels.

The mean IQ for the sample was 101. Training for the replication study took place in southeastern Alabama. All procedures in this study replicated those of study 1 in Experiment 2.

Adaptation

The mean performance of number of trials during training of the Definition group (10.66) was less than the Strategy group (15.83). A t-test for independent groups was performed on the number of trials to criterion: the result showed a significant treatment effect, t(22) = 2.70, p = .01. Simply, it took the definition group significantly fewer trials to reach criterion.

Both groups performed similarly on the transfer test: The Definition group had a mean of 8.33 (SD = 2.6), while the Strategy group had a mean score of 9.0 (SD = 2.0). This difference was not significant (p = .20).

Discussion

In Experiment 1, the results did not parallel findings with non-handicapped students. The results in Experiment 2 actually contradicted findings with second grade non-handicapped students (Ross & Carnine, 1982). Strategy training hindered LD students' performance in learning to draw inferences. As in Experiment 1, the overriding question is how to interpret the results. One line of thought is reflected in other research describing deficits in cognitive abilities of LD students. When reviewing the research in cognitive deficiencies that negatively influence the performance of LD adolescents, Deshler, Schumaker, Alley, Warner, & Clark (1982) state "misperception of cognitive deficiencies in LD adolescents is not as simple as altering motivational factors in the adolescents' environments: the cognitive deficiencies themselves must be addressed" (p. 6). This analysis is important because it emphasizes teaching interventions to overcome cognitive deficiencies of LD students. For example, research supportive of a training strategy for impulsive children has been reported on a variety of techniques: delayed decay (Harcum & Harcum, 1973; Schwebel & Berstein, 1970), self-verbalization (Jensen, 1971; Lovitt & Smith, 1972), modelling (Chapman, 1972; Denny, 1972), and direct instruction (Engelmann & Carnine, 1982). The common linkages between all of these training areas is to train students to use multisite strategies to help eliminate impulsive responding.

Most handicapped students will need extensive strategy training within specific tasks and also training across a variety of activities. Such extensive training with tasks and across different types of tasks was not provided in Experiment 2. Students received a few modeled examples and then feedback on some practice trials.

During the training at the replication site in Experiment 2, the trainer observed that the students taught the strategy approach initially attempted to use it when presented with a problem. Interestingly, the students almost immediately thereafter failed to use the approach in subsequent problems. The trainer reported that some of the subjects appeared to get confused with the application of the strategy after the first or second attempt. It was at this point that the learner gave up attempting to apply the strategy. This observation underscores the importance of intensive strategy training for LD students.

The results of the present research suggests that an instructional perspective toward the acquisition of regularity has resulted in a useful, instructional analysis of three domains: learner variables (individual differences), communication strategies, and environmental constraints.
Motivating students to achieve and earn good grades is frequently a job. Teachers often face a lack of parental support. They must work with students who have been abused, drug problems, absenteeism, and a general apathy about course content. To be successful, motivation is outside of a teacher's control. Certainly, many factors affecting student motivation are outside of the teacher's control. You cannot control a student's home life, nor eliminate all drug use. No matter how hard you work at making your subject interesting, you cannot make every minute of instruction totally interesting for every student in your class. Some part of every course is going to be hard work. There are only three factors affecting motivation the teacher has control over: the quality of the instructional program being used, the quality of teaching skills being implemented, and the type of reinforcement system.

Teachers who have taught Correction Program students should know that students who have failed in other material can become very motivated. The carefully structured teaching material, paired with effective instructional techniques, demonstrates to students that they can be successful. The point system also becomes a symbol of student success. Students soon realize that their points reflect not only their grades, but also their accomplishments. The point system is designed to teach students behaviors that will help each day make success possible. This is exactly what an effective grading system should do.

The turned-in students are those who have consistently gotten poor grades. They look at grades like many look at lottery numbers or sweepstakes. Of course, it would be nice to receive a million dollars. However, the odds are slim that you will win. To succeed in school, is it not easier to try? Every student would love to get an "A" or a "B", but many know from experience that their efforts do little to change the odds. Though many students quit trying, few give up hoping. When teachers hand back tests or papers, it is rare to see a student who doesn't care enough to quickly check out his grade. A grade system that can provide each student that they have some control over the odds.

A grade system needs to be more than a simple evaluation tool. Most grading systems base grades solely on percentage of right answers and time spent on tasks. This type of system works very well for college students and high school students who are bound for college. These sophisticated and successful students recognize that daily effort will give them a grade and performance necessary to complete assignments and pass tests. However, this type of grading system delays any accountability for goofing off until the end of the term. The delay in the consequence results in laziness, poor performing, and premature students failing to learn that they must work consistently through the term to earn good grades.

An effective grading system will not only evaluate student mastery of course objectives, but it will also systematically monitor student performance in class each day. The system will teach students that their daily efforts affect their final grade. This can be accomplished by basing a percentage of the grade on classroom participation, monitoring student performance daily and assigning a weekly participation grade.

The amount of the grade based on participation and effort will vary, depending on the age and sophistication level of students, and on the subject of the course. With a class of highly motivated and mature students, participation and effort might affect the grade as little as five to ten percent. With a group of unmotivated students, participation and effort may need to be as high as 50% of the grade. When you know what percent of the grade is based on participation, simply estimate how many points students will earn each week on assignments and tests, and estimate how many points they could be able to earn each week for participation and effort. For example, if students may earn approximately 150 points each week for assignments and tests, a 10% participation and effort grade would be worth 30 points each week. (If you work with very low performing and unmotivated students, you may wish to assign participation and effort grades on a daily basis.)

Monitoring student behavior each day can be accomplished with very little additional work. Simply keep a class list available. At the end of each period quickly code any behaviors next to student names that indicate above average performance or effort. For example, you might write an "I" for improvement noted with one student, or you might code a "c" for cooperativeness. Any behaviors that will adversely affect a grade should be recorded immediately. This might include a "G" for disruptive or an "O" for off task. At the end of the week, you will have a weekly record for determining overall performance points. Students with no codings would be awarded 80% of the possible weekly performance points. For each coding of outstanding effort and participation, 10% of the possible weekly performance points could be added to the weekly performance grade. On the other hand, if a student demonstrated behavior that interfered with learning, 5% of the weekly points could be subtracted for each negative behavior.

Assigning a weekly grade to every student in a class of 35 can take as few as five minutes each time on Friday. Quickly calculate the points, and post the scores so students can see how their points were assigned. Privacy can be assured by assigning student numbers and covering student names while the procedure is ongoing. This procedure will teach students that their behavior does make a difference in their grades. The key procedure is regularity and immediacy. Each day students will see that their behavior is affecting a weekly and each week they will see that their daily behavior is affecting a final grade.

This type of system will actually teach students how to behave in ways that will have the likelihood of being successful. Students will learn that working in class each day will help them to complete work and pass tests.

Some districts have a policy that prohibits teachers from using behavior in class as a criteria for grading. If this is the case, follow your district's guidelines. However, you might look at that policy closely. First, find out if the intent of the policy is to restrict you from lowering a student's grade because he has misbehaved. If so, you might be able to use a system that bases part of the grade on behavior. Many districts are concerned that points should not be deducted from tests and assignments because of misbehavior. This does not prevent the teacher from saying that students will earn between 0 and 30 points each week based on how hard they work and how well they behave.

If the school policy prohibits using behavior as a criteria for grading you might also see whether you can justify this procedure because your class objectives involve teaching students the behaviors they need to be successful in class. For example, in a home economics class, the ability to stay on task, follow directions, and to follow safety rules are critical behaviors for being successful. This same argument could be used to justify grading on participation and behavior in more traditional academic classes like English or History. Students must learn more than just the information and concepts covered in the class. They also need to learn independent study skills, and listening skills. They need to learn to arrive on time, manage their free time, and work on tasks. Learning these behaviors will be necessary for all future educational and work endeavors. Your district may agree that these behaviors represent reasonable educational objectives, and may justifiably be reflected in your grading system.

Conclusion: Almost every school system in this country uses some type of grading system, and regardless of what "theorists" say, grades are very important to students (Stover & Nicholsen, 1984). Unfortunately, the grading systems used by many teachers only serve to reinforce a student's view of himself as a good or a poor learner. If a grading system is designed well, it will help teach students how to behave in ways that make success possible. Students will learn that they are being monitored and that they are accountable for working hard in class. This will not cure problems related to poor instruction, but it can increase the likelihood that the student will at least try to meet the teacher's expectations.

References on Current Practices Related to Grading


JUNE 18- AUGUST 10, 1984

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The AIMS Assessment System for Integration into Mainstream Settings

By Hill M. Walker - University of Oregon

Overview

The AIMS assessment system for use in mainstreaming handicapped children into less restrictive settings is described. The AIMS assessment system, consisting of five instruments, that makes it possible to: (a) identify minimal behavioral demands of less restrictive settings, (b) make use of this information in the systematic preparation of handicapped children for the behavioral demands that exist within them, and (c) directly assess the handicapped child's adjustment to academic and free play settings following social integration. Following a brief review of the literature, three sections of the paper describe respectively: (a) the AIMS assessment instruments and their use; (b) validation studies, psychometric characteristics, and normative data; and (c) school applications of the AIMS system.

With the passage of P.L. 94-142 in 1975, the regular classroom was viewed as the ultimate and most desirable placement for all handicapped children. Lilly (1971) proposed a "zero-reject" service delivery model in which all handicapped children would be given unlimited and equal access to the regular classroom setting and its normalizing benefits. Nine years after the passage of P.L. 94-142, it is appropriate to ask how well the field has responded to this mandate of Lilly and the mandate of the law.

Though large numbers of handicapped children have achieved access to mainstream environments for at least part of the school day, the structure of more restrictive educational placements (e.g., resource rooms, self-contained classrooms, special day schools, residential facilities) for accommodating this population is still very much in evidence. As first noted by Dunn (1968), the efficacy of most special educational programming efforts continues to be weak in spite of the development of powerful instructional and behavior change technologies (Becker, 1986; Borstein & Kaufin, in press; Caniff, 1984; Engelmann & Engelmann, 1984; Gresham, in press; Strain, 1981; Wilensky & Green, 1983; & Woodward, 1984). Meta-analyses of outcomes attributable to special education programs (Kavale, 1983) consistently demonstrate weak effects, primarily because this technology is not applied systematically. (Walker, Rezvani, Rhode, & Jensen, in press).

Gresham (1982) reviewed research evidence relating to the three major assumptions underlying the passage of P.L. 94-142. These were that: (a) handicapped children would socially participate with their non-handicapped peers in mainstream settings, (b) they would be accepted as work and playmates by them, and (c) mainstreamed handicapped children would model and individualize the appropriate behavior of their non-handicapped peers. Gresham's research shows that none of these assumptions are supported by the empirical evidence that has developed since 1975. The literature on teacher attitudes indicates that teachers, in general, are not as receptive to mainstreaming as we would perhaps hope. Koech and Levitt (1976), for example, found that regular teachers are quite concerned with:

- Inability to control the behavior of handicapped children.
- Inability to maintain an adequate learning pace.
- Inability to maintain discipline.
- Inability to manage the classroom.
- Inability to maintain individual attention.
- Inability to maintain a productive classroom environment.

controlling who is mainstreamed into their classes, (b) their ability to meet the needs of such children, and (c) the availability of support services. Regular teachers also see the social behavior of many mainstream handicapped children as outside the normal range acceptance for the regular classroom (Barres & Doris, 1979). It is apparent that the idealized practices of the P.L. 94-142 mandate have not been realized. In a recent review on mainstreaming, Tawney (1981) describes areas in which the law's goals and recommended practices have not been achieved. Much of the responsibility can be laid to the disillusionment of teachers and schools to make radical changes in long established school practices and service delivery systems.

In my view, the burdens involved in serving mildly handicapped children and in mainstreaming an effective reality were shifted too strongly to the regular educational system. Regular teachers were not sufficiently skilled or motivated to assume these burdens. Mainstreaming efforts were initiated without careful attention to the amount of preparation that was required in the regular classroom to respond effectively to the needs of the children.

This paper describes a multi-method/multi-purpose assessment system for use in mainstreaming handicapped children into less restrictive educational settings. AIMS is used for three primary purposes. These are: (a) to select potential placement settings in the educational mainstream, (b) to produce information on the minimal behavioral requirements necessary for entry into and maintenance in these settings, and (c) to assess the receiving teacher's technical assistance needs in accommodating handicapped children placed in their classrooms.

AIMS uses a combination of social validation, ratings of adaptive and maladaptive child behavior by teachers and direct observations of teacher and child behavior in mainstream settings to achieve these goals. Two major desired outcomes of the system's use are: (a) to achieve a better match between child characteristics and teacher tolerance levels and skills, and (b) a more effective preparation of both the handicapped child and the receiving setting(s) for the mainstreaming process.

The AIMS Assessment Instruments

AIMS consists of five instruments which are designed to be used as an integrated system in the process of mainstreaming handicapped children. Three of the instruments involve teacher ratings of child behavior and two are direct observation codes. The SBS Inventory of Teacher Social Behavior, Mainstreaming and Expectations, and The SBS Checklist of Correlates of Child Handicapping Conditions (Walker & Rankin, 1980) are two instruments used to conduct pre-assessments of the behavioral demands/expectations of teachers in less restrictive settings and to assess potential resistance to placement of children manifesting correlates of handicapping conditions (e.g., mobility problems, hyperactivity, self-help deficits, sensory impairments, and so forth). The SBS Inventory contains 101 items describing adaptive and maladaptive child behavior in the classroom setting and is divided into three sections. In Section I, teachers rate 56 items describing adaptive child behavior in terms of whether they are critical, desirable, or unimportant to a successful adjustment in their classroom. In Section II, 51 items describe maladaptive social behavior are rated along an acceptability dimension of unacceptable, tolerable, or acceptable. Section III asks the teacher to rate the critical and unacceptable items along a technical assistance dimension that indicates whether: (a) a child deficient on a critical-rated item, or outside the normal range on an unacceptable-rated item, would have to be at normal levels prior to social integration into the receiving teacher's classroom, or (b) the technical assistance for specific critical/unacceptable rated items that would be required following placement. Instructions for the item format ratings and behavior criteria are carefully specified within the SBS Inventory.

The SBS Correlates Checklist consists of 24 items that describe conditions and behaviors that were correlated with placement and operationalization.

Figure 1

Sample Items and Rating Formats from the SBS Inventory and Correlates Checklist

<table>
<thead>
<tr>
<th>SBS Inventory</th>
<th>Critical</th>
<th>Desirable</th>
<th>Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child responds to requests and direction promptly.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>( )</td>
<td>( )</td>
<td>( )</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section II</th>
<th>Unacceptable</th>
<th>Tolerable</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child disrupts or distracts the activities of others.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>e.g., hits, bites, chokes, holds.</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section III</th>
<th>In the line space to the left of the SBS Inventory items, indicate whether:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. You would insist that the child have achieved the skill or competency prior to entry into your class, or b. Following entry, you would accept responsibility for developing the skill/competency, but you would expect technical assistance in the process of doing so, or</td>
<td>( )</td>
</tr>
<tr>
<td>c. Following entry, you would accept responsibility for developing the skill/competency and would not require technical assistance.</td>
<td>( )</td>
</tr>
</tbody>
</table>

Similarly, for Section II (unacceptable) items, indicate whether:

| a. The child must be within normal limits on the social behavior in question prior to entry into your class, or b. Following entry, you will take responsibility for moving the child to within normal limits on the social behavior but only with technical assistance provided, or | ( ) |
| c. Following entry, you will take responsibility for moving the child to within normal limits on the social behavior and would not require technical assistance. |

<table>
<thead>
<tr>
<th>SBS Correlates Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child has severely dysfluent speech and/or impaired language.</td>
</tr>
<tr>
<td>Child is unresponsive, e.g., has inadequate bladder control.</td>
</tr>
<tr>
<td>Child requires specialized and/or adapted instructional materials to progress academically.</td>
</tr>
</tbody>
</table>

Direct Instruction News, Spring, 1984

(Continued on Page 12)
characteristics that often cause teacher resistance to placement of children who manifest them. Teachers are asked to check items that would cause them to resist placement and to circle any check-
el. The rank of teachers who believe that prior peer social interaction assistance would remove or attenuate such resistance.

Some items from the three sections of the SBS Inventory and the Correlates Checklist are contained below in Figure 1. Critical-rated items on which the child is deficient and unacceptable items on which she/he is outside normal limits are selected for instruction and/or remediation either prior to or during the mainstreaming process. In order to make this determination, it is necessary for someone with knowledge of the child’s behavior pattern to rate his/her status on these items. At the instrument, The Walker-Rankin Child Behavior Rating Scale, is used for this purpose. This is a criterion-
referenced scale on which a teacher in the sending setting (e.g., special education) assesses the target child’s behavioral status on the critical- and unacceptable-rated items indicated by the receiving teacher(s). The child’s status on the adaptive items is rated along a skill dimension using the following rating options: acceptably skilled, less than acceptably skilled, and considerably less than acceptably skilled. Behavioral status on the maladaptive, social behavior items is rated on a frequency dimension in which the rate of frequency is judged to be either non- existent, nonexistent, minimal, or outside normal limits. Items on which the child is judged to be other than acceptably skilled and considerably less than acceptably skilled are targets for instruction/remediation efforts.

Information provided by these three instruments is very useful in selecting mainstream placement settings and in preparing the target handicapped child to meet the minimum behavioral require-
ments of such settings. They also make it possible for receiving teachers in these settings to specify minimal entry requirements in the form of behavioral criteria and directly assess the teacher’s technical assistance needs on the target- behavior-by-target-behavior basis. The remaining two instruments are direct observation codes that are used to assess the adequacy of the target classroom and peer-to-peer social adjustments following social integration into the less-
restrictive setting.

The codes used for this purpose are the CAC (Classroom Adjustment Code) and the SIC (Social Interaction Code). Both test interval coding procedures generate information on the nature and quality of the target child’s behavior in academic and free-play settings. The CAC uses a 5-second recording interval and contains three categories each for measuring child and teacher behavior. Child behavior codes are mutually exclusive, are global in nature, and measure, respectively, on-task, off-task, and total child behavior. The traces of child behavior are as follows: approval/feedback, providing instructions, and control.

The three teacher codes can be recorded as either group or individual and are not mutually exclusive. The SIC uses a continuous, 10-second time sampling procedure to record three different classes of events associated with the target child’s peer-to-peer social inter-
actions. These are: (a) the structure or activity context in which social interac-
tions occur, (b) the type and quality of the child’s interactive behavior, and (c) three other reactions to the target child’s social behavior. Five structure-
code categories are used to measure where the target child is alone or engaged in structured versus unstructured interac-
tive behavior. If interactive behavior occurs, four appropriate and five inappropri-
cate code categories are then used to record its topography and quality. Negative peer reaction is coded whenever there is negative or avoidant peer responses to the target child’s in-
teractive behavior. The structure codes are mutually exclusive of each other while the appropriate/inappropriate codes are not.

Validation Studies, Psychometric Characteristics, and Normative Data

Four years of research have been in-
vested in the development and initial validation of the AIMS assessment in-
struments. Table I contains a profile of regular teachers from the initial validation sample who scored differently from each other in Social Interaction and Classroom Adjustment. The two forms of variability have been estimated on the Classroom Adjustment (CAC) and Social Interaction (SIC) observation codes. These are construct and discriminant. In two experimental studies of social skills training for mildly handicapped children (Walker, McCon-
nell, & Clarke, in press), both the CAC and SIC codes registered changes for experi-
mental subjects that were: (a) significantly different from those of control conditions, and (b) correlated with changes on other dependent measures. In a descriptive, normative study, the pattern of variability is replicated in any of sample of 50 regular and 50 more teachers.

On the average, teachers mark about 25 percent of the items as unacceptable.

Figure 1. Critical-rated items on which the child is deficient and unacceptable items on which she/he is outside normal limits are selected for instruction and/or remediation either prior to or during the mainstreaming process. In order to make this determination, it is necessary for someone with knowledge of the child’s behavior pattern to rate his/her status on these items.
<table>
<thead>
<tr>
<th>Section I</th>
<th>Section II</th>
<th>SBS Inventory</th>
<th>SBS Correlates Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Critical</strong></td>
<td><strong>Unacceptable</strong></td>
<td><strong>Causes resistance to placement</strong></td>
<td></td>
</tr>
<tr>
<td>Child complies with teacher commands.</td>
<td>High Rated Items</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child follows established classroom rules.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child produces work of acceptable quality given his/her skill level.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child listens carefully to teacher instructions and directions for assignments.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child expresses anger appropriately, e.g., reacts to situaton without being violent or destructive.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child can have normal conversations with peers without becoming hostile or angry.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child behaves appropriately in classroom settings, e.g., hallways, lunchrooms, playground, e.g., waits quietly, follows playground rules, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child avoids breaking classroom rules() even when encouraged by a peer.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child does seatwork assignments as directed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child makes his/her assistance needs known in an appropriate manner, e.g., asks to go to the bathroom, raise hand when finished with work, asks for help when work is too hard, lets teacher know when sick or hurt.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Inventory. There is considerable similarity between different teacher groups (elementary, secondary, special education, preschool, in-service) in their responses to this instrument. This similarity is apparent in both the pattern of scoring and in the content of items consistently rated high (critical/unacceptable) versus low (unimportant/acceptable).

Table 2 below contains characteristic patterns of scoring for different teacher groups on Section I and II of the SBS Inventory and Correlates Checklist. High-rated items are those most frequently rated critical or unacceptable; low-rated items are those least often rated critical or unacceptable. High- and low-rated Checklist items are those most and least often checked as causing teacher resistance to placement. Inspection of the item content in Table 3 reveals some interesting differences in the highest and lowest rated items on the SBS Inventory and Correlates Checklist. For example, the lowest rated inventory items in Sections I and II have a strong peer social behavior content. This finding consistently replicates for both regular and special education teachers and suggests that peer relations and social skills are assigned a comparatively lower priority by both groups than compliance, control, and discipline. In this regard, the content of the highest rated Section I items dealt almost exclusively with classroom control, general discipline, and compliance with teacher instructions and comments. In contrast, the highest rated Section II items (i.e., most unacceptable) deal with child behavior that are (a) of high magnitude or intensity and (b) occur at an extremely low frequency in most classrooms. A child exhibiting one of these pinpoints, even once, would be labelled problematic or deviant by a majority of teachers.

The most frequently checked items on the SBS Correlates Checklist are highly averse to most teachers. They exceed teacher tolerance levels, make or require demands on the teacher, and often require skills not possessed by teachers. None of the lowest rated items share these characteristics.

Tables 4 and 5 below contain normative comparisons for handicapped and nonhandicapped pupils in classroom and free-play settings derived from the classroom adjustment and social interaction codes. The handicapped sample ranged in age from 6 to 11 and were enrolled in grades 1-4. Six of the children were classified as learning disabled, one as language impaired, two as emotionally handicapped, and one as multiply handicapped. The nonhandicapped children ranged in age from 6 to 11 years and were enrolled in grades 1 to 6. The handicapped sample was observed in special education settings and the nonhandicapped sample in regular classroom settings.

Table 4 indicates substantially higher levels of on-task behavior for the nonhandicapped sample. The handicapped sample received much higher levels of individual teacher instructional attention in their respective classrooms. In a subsequent study of 20 mainstreamed handicapped children (Clarke, Walker, Walker, & McConnell, 1984), the authors found that this sample averaged 69 percent on-task behavior (S.D. = 13 percent) in regular classrooms received approximately identical amounts of teacher attention as did their nonhandicapped peers.

### Table 4: Normative Comparisons on the Classroom Adjustment Code (CAC) for Handicapped and Nonhandicapped Children in Academic Settings

<table>
<thead>
<tr>
<th>Code Category</th>
<th>Normal, Non-Handicapped Sample (N = 12)</th>
<th>Handicapped, Non-Maintained Sample (N = 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X, S.D.</td>
<td>X, S.D.</td>
<td></td>
</tr>
<tr>
<td>1. Child Behavior Codes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-Task</td>
<td>.92%</td>
<td>.09%</td>
</tr>
<tr>
<td>Off-Task</td>
<td>.08%</td>
<td>.38%</td>
</tr>
<tr>
<td>Unacceptable</td>
<td>.00%</td>
<td>.25%</td>
</tr>
<tr>
<td>Child desires</td>
<td>.0_0%</td>
<td>.02%</td>
</tr>
<tr>
<td>2. Teacher Behavior Codes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>.01%</td>
<td>.02%</td>
</tr>
<tr>
<td>Approval/Feedback</td>
<td>.015%</td>
<td>.01%</td>
</tr>
<tr>
<td>Instruction/Command</td>
<td>.012%</td>
<td>.015%</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>.001%</td>
<td>.001%</td>
</tr>
</tbody>
</table>

### Table 5: Normative Comparison on the Social Interaction Code (SIC) for Handicapped and Nonhandicapped Children in Free Play Settings

<table>
<thead>
<tr>
<th>SIC Measure</th>
<th>Handicapped Sample (N = 12)</th>
<th>Non-Handicapped Sample (N = 12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Percent of time spent in social behavior</td>
<td>.75%</td>
<td>.98%</td>
</tr>
<tr>
<td>2. Percent of time spent in verbal interactive behavior</td>
<td>.32%</td>
<td>.48%</td>
</tr>
<tr>
<td>3. Percent of time spent alone</td>
<td>.29%</td>
<td>2%</td>
</tr>
<tr>
<td>4. Percent of time spent in inappropriate interactive behavior</td>
<td>.21%</td>
<td>.32%</td>
</tr>
<tr>
<td>5. Percent of time spent in appropriate interactive behavior</td>
<td>.07%</td>
<td>.04%</td>
</tr>
</tbody>
</table>

**DIRECTIONS INSTRUCTION NEWS, SPRING, 1993**

**Continued on Page 14**
DI at the Nashville ABA Convention

By Russell Gersten

The national conference for the Association for Behavior Analysis (ABA) will be held in Nashville (at Opryland) on May 28-31. A wide range of seminars, panel discussions, and research symposia are scheduled. Sessions are scheduled on microcomputer applications of DI, research on interactive training, and in teaching social skills, problems in implementing DI within the public schools, some of the longitudinal research described in earlier issues of ADI News, reading comprehension, and innovative applications of DI to special education. This year several of the most prominent behavioral researchers will participate in the symposia—Donald Baer, Beth Sulzer-Azaroff, Tim Heron—in an attempt to explore commonalities between these approaches.

AIMS (Continued from Page 13)

Table 5 presents normative comparisons for the two samples on five measures derived from the Social Integration Code. They document very different patterns of social behavior for handicapped and nonhandicapped children in free-play settings. All of the comparisons favor the nonhandicapped sample.

These data provide valuable criteria for interpreting CAC and SIC scores recorded on individual children. They also demonstrate the codes' sensitivity in discriminating differences in the classroom and social behavior of handicapped and nonhandicapped children.

School Applications of the AIMS System

The AIMS system was designed to facilitate achievement of the following service goals via the mainstreaming process:

(a) to select appropriate placement settings for the social integration of handicapped children, (b) to identify the minimum behavioral requirements for entry into and mainstreaming within them, (c) to make it possible to use this information prescriptively in the systematic preparation of handicapped children to meet the behavioral demands of less restrictive settings, (d) to assess the receiving teacher's technical assistance needs in accommodating the mainstreamed child, and (e) to assess the quality and adequacy of the handicapped child's adjustment to academic and free-play settings following social integration. As yet, the system has not been tested or validated against these goals.

To do so would require demonstrations that mainstreaming placements made with the AIMS system are more accurate or effective than those made with current procedures. In addition, the adjustment status of target handicapped should be improved following social integration. Finally, the overall mainstreaming process should receive higher social validation ratings from receiving teachers as a result of the AIMS system's use. Several model demonstrations that would answer these questions are currently being planned by other investigators. Until these comparative evaluations are made and the entire AIMS system is validated, it will not be possible to claim that its use improves the mainstreaming process.

The AIMS system has other potential uses beyond the mainstreaming process. These include: (a) matching child behavioral characteristics to teachers' behavior expectations, (b) the identification of staff in-service training needs, and (c) the selection and training of teachers at the preservice level. The system also generates a number of researchable questions relating to existing school practices.

Conclusions

The AIMS assessment system represents only a partial and as yet unproven solution to the problems that continue to plague the mainstreaming process. It is apparent, however, that conflicts between the behavioral expectations and tolerance levels of teachers in mainstreaming settings and the social behavior deficits and excesses handicapped children continue to be a major obstacle to mainstreaming. Jores (1978) in commenting on this issue, called for systematic research attention to: (a) the attitudes that regular teachers perceive as impeding their work to effectively with handicapped children and (b) strategies to equip both teachers and handicapped children with behavioral competencies to reduce the strain in their interactions with each other and with nonhandicapped pupils. It is apparent that the self-sufficient teacher who can accommodate mainstreamed handicapped children without external support assistance, as envisioned by Libby (1971), is still an elusive goal.

References


For the first time, mini-training sessions will be offered as part of the conference. There will be one introductory session (DI Variables in Action) on basic presentation skills in beginning reading and spelling. Two intermediate sessions will be offered on supervision, and one on teaching comprehension in the new Reading Mastery Series, Levels 3, 4, and 5.

A schedule of the events follows. For further information on the conference please contact:

ABA
Department of Psychology
Western Michigan University
Kalamazoo, MI 49008

Training Sessions

Monday, May 28
Morning
Supervision of Direct Instruction
Trainer: Linda Youngmay & Cathy Madigan

Afternoon
Teaching Comprehension of the Low Performer:
Reading Mastery 3, 4, 5 and Corrective Reading:
Comprehension Series
Trainer: Donna Dwiggins

Tuesday, May 29
Morning
Direct Instruction Variables in Action: Introduction to Reading Mastery and Mastery Spelling
Trainer: Carmen Marcy

Symposia

Monday, May 28
2:00-2:30
Teaching Success to Adolescents with Severe Behavior Disorders
Panelists: Carmen Marcy, Donna Dwiggins, Michael Maloney

4:00-5:30
Implementation of Direct Instruction—Within the Public School System and without the Public Schools
Panelists: Kent Johnson, Carmen Marcy, Roberta Weisburg, Mike Roberts, Michael Maloney, Shilone Cohen

5:30
ADI Meeting (Special Interest Group on Direct Instruction) Followed by informal cocktail hour

Tuesday, May 29
9:00-10:30
Direct Instruction in Reading Comprehension
Papers by: Ed Kameenui, Craig Darch, Russell Gersten, Donna Dwiggins
Discussants: Tim Heron
Chair: Jane Howard

11:00-12:30
The Interface of DI and Computer Assisted Instruction
Papers by: Ron Thorkildsen and Russell Gersten
Chair: O. Barker Houghton

1:00-1:30
ADI Conversation Hour. An opportunity to meet the presenters and discuss practical problems in implementing and evaluating DI programs.
Hosts: Jane Howard and Russell Gersten
DI in Special Education—New Directions
Papers by: Ron Thorkildsen, Jo-Ann Sowers, Russell Gersten, Craig Darch
Discussant: Beth Sulzer-Azaroff
Chair: Robert Taylor

Wednesday, May 30
9:00-10:20
Long-Term Maintenance of Effects of DI Programs
Chair: Beth Sulzer-Azaroff
Papers by: Paul Weisburg, Russell Gersten
Discussant: Donald Baer

2:00-3:30
Minority Overrepresentation in Special Education: A Case for DI Prior to Referal
Panelists: Larry Mahaney, Charles Greenwood, Robert Taylor, Russell Gersten, Ethna Reid (and/or a representative of ECRI)
Master Match

Published by: Computer Advanced Ideas, Inc.
1543 A Walnut Street, Suite 341
Brea, CA 92620
For: Apple II — 48K, dual drive

Reviewed by Betty Atch-Lois

Editor's note: Betty Atch-Lois has been teaching special education for 12 years. She is currently a Resource Specialist in Redwood City, CA. Her BA (Elementary/Special Education) and MA (Learning Disabilities/Behavior Disorders) are from the University of Iowa. She is now enrolled in a Master’s program in Computer Science Education at the University of Oregon. She has been involved in the educational use of computers for five years. She consults with a private research firm on critical factors in the design of software for children with learning disabilities. She is a software reviewer for Journal of Computers, Reading and Language Arts, and Teaching and Computers.

Courseware Evaluation Form
Each item is rated using the following code:
E = Excellent
A = Acceptable
M = Marginal
U = Unacceptable
N.A. = Not Applicable

CONTENT
1. Is the content accurate?  E
2. Is the content of educational value?  M
3. Is the content free of sexist bias?  E

INSTRUCTIONAL DESIGN
1. Objectives
   a. Are objectives clearly stated?  A
   b. Are objectives defined to the learner?  A
   c. Is the program content consistent with objectives?  E

2. Individualization
   a. Is the target audience specified?  E
   b. Are entry skills specified?  U
   c. Is a pretest or placement test provided?  N.A.
   d. Are a variety of entry points available?  E
   e. Are options for exiting or reentering to stems available?  E
   f. Can the program be altered?  E
   g. Is there a method of record-keeping?  N.A.

3. Presentation
   a. Do the activities optimally match the content?  A
   b. Are Program (Instructional, Drill & Practice/Testing, Simulation) tasks sequential or restrictive response forms?  E
   c. Is drill and practice/testing provided?  E
   d. Does drill and practice/testing provide varying levels of difficulty?  E
   e. Does drill and practice/testing provide cumulative instruction?  E
   f. Does drill and practice/testing provide review of incorrect responses?  E

4. Feedback
   a. Are all errors corrected?  E
   b. Does the correction fit in the context in which the error occurred?  E
   c. Is the feedback informative?  E

5. Review
   a. Is review provided for newly acquired skills?  M
   b. Does review incorporate previously learned skills into more complex applications?  M

6. Motivation
   a. Is the level of difficulty challenging to the learner?  E
   b. Is the material presented at a good pace?  M
   c. Are readiness levels appropriate to the target audience?  M
   d. Is user control granted to the learner where appropriate?  M
   e. Does the use of graphics/audiotape/color increase interest in program content?  E

7. Reinforcement
   a. Is reinforcement age-appropriate?  E
   b. Is reinforcement used appropriately?  M
   c. Is a variety of reinforcement used?  M

PROGRAM UTILITY
1. Are user-support materials included?  E
2. Is there a Teacher's Manual?  M
3. Is the program easy to operate?  E
4. Is the program reliable under normal use?  E
5. Can the program analyze a variety of responses?  E
6. Are information displays attractive?  E

Table 5

<table>
<thead>
<tr>
<th>Evaluation Summary Form</th>
<th>Title: Master Match</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Excellent</td>
<td>A</td>
</tr>
</tbody>
</table>

INSTRUCTIONAL DESIGN
1. Objectives  E  A  M  U
2. Individualization  E  A  M  U
3. Presentation  E  A  M  U
4. Feedback  E  A  M  U
5. Review  E  A  M  U
6. Motivation  E  A  M  U
7. Reinforcement  E  A  M  U

PROGRAM UTILITY  E  A  M  U

STRENGTHS: "Master Match" has reliable content in a variety of subject areas, and is appropriate for a wide audience of varying abilities. It is easy to use. The game format is motivating for students.

Weaknesses: It offers practice in visual memory rather than reinforcement of previously taught material. Students are thus evaluated in terms of their memory rather than for their knowledge of content.

The presentation format is repetitive, which creates a senselessly long wait between student responses.

RECOMMENDATIONS: This program is intended to be an entertaining solution for a national computer game. As such, it has a place in the classroom as a reward activity. It does not teach or reinforce concepts and should not be used as such.
For Educators of Elementary and Intermediate Students

Structuring Your Classroom for Academic Success


Stan Paine and his colleagues, all advocates and practitioners of the Direct Instruction approach, have written a usable book for educators of elementary and intermediate students. They adeptly apply the fundamental principles of Direct Instruction to often misunderstood yet everpresent, management dilemmas found in the classroom. The book contains procedures for dealing with every aspect of organizing a classroom initially to managing it on a day-to-day basis. All of the management procedures appear to be based on experimental classroom research. The procedures have proven to be effective in special education as well as regular educational settings.

An exceptional feature of the book is its practical orientation. Teachers should find many of the issues discussed analogous to those encountered in actual teaching situations. The chapters include suggestions for: (1) organizing classroom space; (2) using volunteers and aides in the classroom; (3) using attention to manage student behavior; (4) establishing and teaching classroom rules; (5) structuring and managing classroom time; (6) managing the flow of material in the classroom; (7) handling student requests for assistance; (8) correcting student's work and keeping track of their progress; (9) working with minor behavior problems; (10) developing good work habits; and (11) phasing out special procedures.

The primary purpose of the text is to present techniques that will prevent problems, rather than solving them after the fact. Teachers will find themselves talking, working on tasks, and make the best use of everyone's time and energy. An example of the management procedures included is the handling of student requests for assistance. Students working independently will inevitably encounter tasks that require teacher aid. As an alternative to conventional practices of interruptions or unproductive waiting periods, Paine et al. describe a non-disruptive, efficient procedure for requesting assistance which utilizes a three-sided card and a folder. Each student is provided a "Please Help Me" card, which is used to signal the teacher for help with assigned work. At the same time, a folder containing work that the student can turn to for practice while waiting for the teacher's help is also recommended. This procedure allows students to make a request for assistance without disturbing classroom procedures and simultaneously to remain on task. Both of these behaviors comply with Paine's principles of maximizing instructional time and minimizing management time.

Detailed plans for implementation, known as scripts, are provided for procedures. Whether instructing students in correcting their own papers, or establishing classroom rules, individual scripts accompany each new strategy. The scripts are used for introducing desired behaviors and for maintenance of these behaviors through the use of modified scripts. The format includes the teacher's definition of the target behavior and the students' oral repetition of the identical information. The student responses are performed on signal and generally are made in unison. Following the introduction of the new procedure, the remainder of the script consists of the instructor's precise description of the information considered critical for establishing and maintaining new skills. As in the initial definition, students play an active role in rehearsing information contained in the script. Brief scripts are used to remind students of initial teaching of a procedure. They can be used following any break in school routine and with the enrollment of new students in the classroom.

Scripts are explicit and easy to follow. Nevertheless, teachers are encouraged to practice them prior to use. The guidelines specified in the scripts may seem overly redundant at times. However, Paine et al. reiterate the necessity of attention to detail. The book's procedures are based on the concept that with sufficient structure of the curriculum, even high-risk learners are capable of succeeding in school. Teachers should find these scripts easily applicable to daily instructional routines.

The authors' proposals for managing classrooms, though thoroughly designed and well developed, place heavy demands on the teacher in the initial stages of implementation. The authors suggest that efficient use of aides and students' familiarity with procedure will reduce teacher requirements. A unique characteristic of this management approach, which also lessens student dependency on the teacher, is the "phasing out" procedure. Paine and his colleagues have cleverly devised a system for removing artificial structures once consistent, acceptable classroom behavior is exhibited by students.

While the authors have designed a set of procedures which must be stringently followed, elements of flexibility have also been included. Implementation of the total program is advised; however, the management procedures have been individually introduced and are not contiguous on previous strategies. This approach allows teachers with time or resource constraints to select areas most needed to improve their teaching environment and management skills. The procedures presented address both primary and intermediate grades' needs. A method of modifying behavior problems through a whole-class approach appears efficient and effective.

As proponents of the preventive approach to education, Paine et al. emphasize teachers must assume that students will behave well voluntarily. They argue that the behaviors one wants exhibited in the classroom must be carefully explained and rehearsed, leaving no room for misinterpretation by the student. Included in the book are procedures for teaching students how to behave in a variety of classroom situations such as group instruction periods and transitions.

The writers' positive approach to education is encouraging. Their suggestions are manageable and leave one eager to employ them. Teachers should find these procedures to be very usable—a clearly needed addition to the typical teacher training literature. Structuring Your Classroom for Academic Success is a well-developed compilation of management techniques that should prove valuable for novel and experienced teachers. Once implemented, these procedures should ultimately maximize instructional time, minimize management time and accomplish the goal of improving student performance in the classroom.

Deborah Simmons
Purdue University

Call for Papers

This newsletter is intended to be a continuing forum for the exchange of ideas among the readers, the consumer group. Therefore, we very much want your input in future issues. The editors invite your contributions of manuscripts, comments, ideas, inquiries, or information suitable for publication in The DI News. Any item relevant to direct instruction is appropriate for the News. A working list of the types of items the News will publish, along with submissions guidelines for each, appears in this issue. All submissions and inquiries are edited for length, readability, and technical accuracy prior to publication. Issues will be published in fall, winter, spring, and summer. Please submit (postmark) all items no later than the first of September, December, March, and June.

Master Match
(Continued from Page 15)

have been uncovered. However, the game may be interrupted at any point by pressing the ESC key. The winner is the one with the highest score at that point.

IV. Program utility. "Master Match" is easy to use. Most students will be able to use it successfully with minimal adult supervision after the initial introduction. It can be best used as a reward activity in the classroom rather than as a teaching tool.

V. Summary. For the most part, this is an entertaining game. Its educational value comes from practice in visual memory and reinforcement of previous knowledge. However, its lack of challenge may make it unacceptable for some school systems. Computer Advanced Ideas sells its software "as is." There is no warranty. There is no liability for defects. No responsibility is taken for faulty disks. Until that policy is changed, their products should not be considered for purchase by schools.

16 DIRECT INSTRUCTION NEWS, SPRING, 1984
My Reactions to the UO Program for Teachers of the Mildly Handicapped

By Diane Kinder
Forest Grove, OR.

I entered the University of Oregon Mildly Handicapped Master’s program in 1981 after nine years of elementary teaching. Now, after finishing the program and my first year teaching handicapped students, ADE News has asked me to evaluate my U of O experience. To do this, I will describe my training and the special education job.

The University of Oregon Mildly Handicapped Master’s includes competency-based practice supported by research-based methods classes, professional practice work, and classes relating to exceptional children.

The practice is three terms of supervised, competency-based practice: the first term entails the planning and training, the second term is the planning and training, and the third term is the planning and training.

I received eight formal assignments to improve my teaching abilities. These assignments were: teaching plans, teaching plans, teaching plans, teaching plans, teaching plans, teaching plans, teaching plans, teaching plans, and teaching plans.

The teaching of exceptional students varies from teacher to teacher. I was amazed at the variety of techniques teachers used to teach their students.

I have taught exceptional students in a variety of settings, including self-contained classes, integrated classes, resource rooms, and regular classrooms.

I have observed that teachers use a variety of strategies to teach exceptional students. Some teachers use behavior modification techniques, while others use visual and auditory aids.

I have also observed that teachers use a variety of assessment tools to evaluate the progress of their students. Some teachers use standardized tests, while others use informal assessments.

I have found that parents are an important part of the educational team. I have observed that parents are involved in the planning and implementation of their children’s education.

I have found that the University of Oregon Mildly Handicapped Master’s program is an excellent preparation for teaching exceptional students. I have gained a greater understanding of the needs of exceptional students and the strategies that can be used to meet those needs. I would recommend this program to other teachers who are interested in teaching exceptional students.
Instructional Interventions for LD
By Marilyn Stepenoski – University of Oregon

Learning, failure of mildly handi-
capped students in the regular class-
room may be due, in part, to the
nature of the instruction offered in the
regular classroom. Such students may be able to achieve even
when instruction is complex or in-
consistent. Inability to handle a dis-
task can become confused or distracted by
Teaching methods that are less than
optimal.

Identifying instructional variables that
lead to improved student performance has been an important aim of educa-
tional research. Over the last five years there have been a number of
experiments in regular classrooms that have been designed by
researchers in special education to study the effects of several variables on
student achievement. Recent studies of this kind have shown that instruc-
tional variables are important in determining the amount of
learning that occurs in the regular classroom. (Brownstein 
and Steinberg, 1980).

For example, providing academic
feedback and corrective feedback, teaching to mastery and
monitoring student performance have been consistently linked to student
achievement in the regular classroom. (Brownstein 
and Steinberg, 1980).

In this article, I will focus on recent research coming from the Learning
Disabilities Research and Studies. Students who have not been successful
in the regular classroom or who have been diagnosed as Learning Disabled
(LD) have been shown to benefit from special teaching techniques.

Background of the Studies
In the late 1970s, five universities received research funding grants from
the U.S. Department of Education’s Bureau for the Handicapped. The grants were to be
used to establish research institutes that would study the lives of LD students, then
develop and evaluate empirically effective
interventions for that group of
students. The five universities funded were the University of Illinois at
Chicago, the University of Kansas, the University of Minnesota, Teachers Col-
lege of Columbia University, and the University of Virginia.

Each institute established its research in a manner that differed from that of
the other four, and addressed the problems from different perspectives. The
Chicago institute studied “oral communicative competence and adaptive
skills” (O’Connor, 1983) and the University of Kansas studied “success and
failure in elementary education” (Brownstein 
and Steinberg, 1980).

The work was conducted with LD students, non-handicapped students, and,
suburban public schools, private schools, and a special school for LD
students. The students studied were in grades one through eight.

The Kansas Institute developed their “learning strategies” intervention model in
two developmental stages: (1) during their first two years, they studied the
learning characteristics of LD adolescents and their school settings to
establish a database. Based on this data, the researchers developed an
intervention instructional methodology, material selection, and instruc-
tional and evaluation components. They worked with LD students and low-
achieving students in three large school districts, working on

use of feedback in learning and perfor-

mance of LD students. Most instruc-
tional interventions classified as in-
structional feedback by-product of learning rather than a primary
instructional goal. Neglect of the feedback is based on the pre-
ecence that LD students encounter in discriminating
and correcting incorrect responses (Bellini, 1982; Klos, Clark, 
and Nolan, 1982).

Given that correcting errors is a critical variable, the question becomes:
should teachers respond to students’ answers? For example, Payne (1983) compared the effect of practice only and practice with informative feedback on sixth grade students.

The results were quite clear: students who were given practice with informative feedback made significantly more progress on the questions than those who were given practice only.

Another line of research included in this report which attempted to make:
grade-level evaluations of the teaching components or combinations of
components linked with academic gains (Leinfurth, Zigmond & Cooley, 1981; Engler, 1983).

Interventional Strategies
from Direct Instruction
Researchers at the Columbia, Kansas, and Virginia institutes incorporated into
their intervention models many features from direct instruction. Stevens
and Rosenhine (1981) have described these features as central:

1. Focus on academics
2. Teaching and ordering objectives
3. Direct teaching (model and practice)
4. Supervised practice
5. Corrective feedback
6. Teaching to mastery
7. Continuous monitoring of student progress

In many of the studies reviewed by
this author, the researchers examined more than one of these features or
varied them in order to improve the inter-
national program. First reported were the major findings research on these three specific instructional components:

1. Corrective feedback
2. Teaching to mastery
3. Continuous monitoring of student progress

Feedback and Correction Procedures
While the importance of monitoring
errors is clearly documented in the
research literature, much less emphasis has been given to this topic in the LD literature. DeShler (1974), in a review of the most frequently used special education classrooms, found
only one test that discussed the important
role of monitoring performance and

Continuous Monitoring of Student Performance
Rosenhine (1981) has pointed out that “comparing diagnostic and mastery learning in their interven-
tion. Their results showed that: (1) students benefited from fact
and the mastered material was in depen-
dence used to improve instruction. (2) students made significant gains in academic performance.

Intervention Models
Three research institutes designed intervention models in basic academics:
incorporating features of systematic instruction: (1) LD efficient instruction (Columbia); (2) Learning Strategies Curriculum” (Kansas); and (3) “Academic Strategies” (Virginia).

LD Efficient Instruction
Characteristics of the Instructional Materials and Research
In developing a strategy to teach basic reading and spelling skills to LD
students, the Columbia researchers developed LD efficient lessons. Lessons incorporated feedback procedures until mastery is achieved (Bryant, 1980a).

According to Block (1971), the steps in mastery learning procedures include:
1. Specification of instructional ob-

2. Well-defined tasks.
3. Mastery of specific steps in the skills hierarchy.
5. Provision for repeated instruction.

Since the goal is to reach a specific level of mastery, item 5 above, giving repeated practice, is a crucial factor, the criterion for slow learners (Bryant, 1980b).

Bryant, Payne & Gettinger (1980) ap-
plesess constitutes one important element in
word instruction for elementary

learning disabled students with special

reading and spelling disabilities. Words were presented in a 9 day instruction sequence that contained unit size, focus words (teaching words), providing demonstrations, and prompts) and teaching to mastery. The results on an immediate posttest and a delayed criterion-referenced test showed that 96% of the LD students reached 80% accuracy.

Helson, Friedman, and Friberg (1983) presented 126 LD students, ages 8-14, basic math fact instruction using instruc-
tional principles from direct instruction and mastery learning in their interven-
tion. Their results showed that: (1) students benefited from fact
and the mastered material was in depen-
dence used to improve instruction. (2) students made significant gains in academic performance.
Students: A Review of Recent Research

2. giving sufficient practice so that a level of mastery is reached (e.g. minimum 80% accuracy),
3. allowing time for distributed practi-

cise and review.
4. providing discrimination training, and
5. training for appropriate transfer.

Academic Strategies Training: Methodology and Research

The Virginia Institute developed educational interventions for reading and math based on Direct Instruction design and teaching practices. Table 1 shows an attack strategy for the class of basic multiplication facts (from Callim, Lloyd, and Epstein, 1981).

<table>
<thead>
<tr>
<th>Table 1</th>
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<tr>
<td>Attack Strategies for Multiplication</td>
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- **Attack Strategy: Count by one number the number of times indicated by the other number.**

- **Steps in Attack Strategy:**
  1. **Read the problem:**
  2. **Find the answer:**
  3. **Make the number of marks indicated by the other number.**
  4. **Count to the number of marks indicated by the other number.**
  5. **Add the answer:**
  6. **Write the total number you said in the answer box.**

- **Example:**
  - Solve: 5 x 2 + 3
  - **Student's Answer:** 11

- **Notes:**
  - The answer is correct.
  - The student understands the process of multiplication.

Teaching strategies such as the above were evaluated for their effectiveness in improving student performance. The results showed significant improvements in student accuracy and speed, which are essential for success in mathematics and other academic subjects. The strategies included for the Virginia Institute's program were:

- **Teaching Procedures:**
  1. **Direct Instruction:**
  2. **Immediate Feedback:**
  3. **Progress Monitoring:**
  4. **Classroom Management:**

- **Results:**
  - Significant improvements in student accuracy and speed.
  - Increased student engagement and motivation.

- **Conclusion:**
  - The use of Direct Instruction strategies in mathematics education can be very effective when implemented correctly.

References

Fluency and Skill Maintenance by the Handicapped

Julie A. Williams and Richard Albin

Maintenance of learned performance has been a concern to teachers of severely handicapped individuals. This paper focuses on one variable that may affect maintenance: fluency of performance. The hypothesis is that skills performed fluently are likely to maintain longer than nonfluently performed behaviors (Baer, 1972; White & Haring, 1980). Direct Instruction literature has long advocated the "trimming" of academic skills such as reading and arithmetic (Engelmann & Bruner, 1968; Engelmann & Carnine, 1979). These skills typically are considered firm when the student can perform them quickly and accurately. It becomes more difficult to discuss fluency, however, when teaching the types of skills found on the IEP's of severely handicapped high school students (i.e., ride a bus, do laundry, eat in a fast-food restaurant). To date, there have been few attempts to document empirically "fluency-building" as a strategy for facilitating maintenance. While fluency is only loosely defined (in both the Direct Instruction and general Special Education literature), its relevance appears to be increasing. This present paper is to define the importance of "fluency" for maintaining adaptive behavior with severely handicapped students.

In defining fluency, most authors combine accuracy of responding with a limited measure of performance such as rate, latency, or duration of responding. The stability of responding and the "smoothness" of performance (i.e., moving sequentially through a chain of responses without pause or hesitation, on one step or backtracking to earlier steps) may also define fluent performance. For example, Baer (1972) defines fluency as "any or all of the following: high rate of performance, high accuracy of performance, fast (shortening the time given the opportunity to perform, and strong response)" (p. 17). In reference to reading, Carnine and Silliker (1977) write, "fluency is reading smoothly, quickly, and with expression" (p. 33). As advocates of fluency building argue, it is important that students not only perform the task, but also that they do so at an appropriate rate and/or with a degree of smoothness or rhythm.

Fluency, as defined above, may facilitate maintenance in several ways. First, fluent behavior may be more likely to be reinforced by natural reinforcers. Baer (1972) emphasizes that behaviors need to be sufficiently learned, (e.g., fluent) to condition natural communities of reinforcers. He notes that skilled behaviors may be maintained with tokens to read, initially stop responding when the tokens are stopped. However, when the fluent reader is asked to read fluently, reinforcement, reinforcement was no longer necessary to maintain the reading. In fact, fluent reader was asked to be able to "pay tokens for the opportunity to read" (Baer, 1972). A response that is not fluent (performed with a latency significantly below the norm) may produce little, if any, reinforcement from the natural community. For example, a handcapped worker who can bus tables in a restaurant with 100% accuracy, but takes 10 minutes to bus each table will likely experience only aversive consequences. Therefore, this skill could be improved using fluency training.

A second relationship between fluency and maintenance involves the opportunity to perform the task. If students who perform behaviors both accurately and at a high rate are much more likely to extinguish the opportunity to perform than are students who are accurate, but very slow. Caregivers may prefer to do the behavior themselves as opposed to waiting for the accurate, but nonfluently, performer to respond (Billingham & Libby, 1983). For example, the may choose to do the student's banking for him/her, because it takes the student too long to do it independently. In essence, result is that opportunities for nonfluency behaviors are no longer given. The likelihood of any behavior maintaining in the absence of opportunities for performance is low.

Finally, fluent behaviors may demand a lowered response cost from the student and therefore be more likely to maintain. This assumption is that a fluent behavior is more easily produced (i.e., take less effort) than a nonfluently behavior. When associated with higher response costs, reinforcement is more likely to extinguish following responses. More fluent competing behaviors with higher response costs (Horner, Bellamy & Colvin, 1983). For example, a child who has recently learned to tie his or her shoe (i.e., it takes 10 minutes to tie), may revert back to asking his or her mother to tie his or her shoe less that, that of other competing responses (i.e., equally fluent, or nonfluently), will be the new behavior maintain.

The major implication of the preceding discussions is that teachers need to teach students both accuracy and fluency in performing target skills. This dual training criterion is especially relevant for severely handicapped learners who may be receiving help and community living behaviors.

Several procedures for building fluency have been suggested in the special education literature. For example, adding additional practice time to training (labeled drill) and practice by White & Haring (1976) is an alternative method for increasing fluency of performance. Repetition alone may generate increasingly fluent performance; however, there is increasing evidence that excessive repetition may result in a "bored and frustrated" student who becomes performing less competently. The procedures used to make a response fluent should not be assumed to be the same procedures used to teach the response initially.

References

Di Principles in Teaching Autistic Children

Robert E. O'Neill and Glen Dunlap
University of California, Santa Barbara

The past twenty years has brought a proliferation of interest and a delineation of educational principles and procedures applicable to autistic individuals (Koegel, R. & Egel, 1982). Parallelizing the progress in educating children with autism has been major developments in instructional approaches geared to broader-based populations. In particular, Direct Instruction has evolved into a powerful, systematic model with applications to children with autism, as well as to those with other degrees of educational problems and needs (Becker, 1977; Becker & Carnine, 1980, 1981; Engelmann, 1977; Engelmann & Colvin, 1983).

The purpose of this paper is to illustrate some generality of techniques by relating some of their recent developments in instruction with children with autism to our recent research, we and our colleagues at UCSC and other centers have worked with relatively isolated techniques for children with autism. Increasingly, we are finding that despite the apparent conceptual differences, the underlying variables of effective instruction are surprisingly similar to those that influence the learning of other children. In order to demonstrate this affinity, we will briefly discuss three areas of recent research, each of which is related to previous writings in the DI literature. These areas are stimulus control, task variation, and instructional pacing.

Stimulus Control

A prominent feature of DI theory and procedures is the emphasis on bringing responses in line with the control of specific, relevant stimuli (Becker, Engelmann, & Thomas, 1979; Becker & Carnine, 1980; Herren, Bellamy, & Colvin, 1983). Research has shown that this is a particularly important aspect of teaching autistic children, and prior studies have shown that autistic children often learn to respond to uncorrelated stimuli. As a result, they often fail to perform the response when they are expected to do so in highly structured activities. (Rincover & Koegel, 1975) investigated such stimulus control problems in a study of 11 autistic children. The children were taught (in a treatment room) to respond to simple verbal commands such as, "Touch your nose." The children's performance of these responses was then assessed in a novel setting. The children who failed to respond in the extra-thrapy settings underwent retroactive assessment. The results demonstrated that these children were responding to idiomspecific and irrelevant stimuli from the training environment, such as the furniture, or inappropriate and irrelevant cues from the teacher. When the relevant stimuli were introduced into the extra stimulation, the children performed the responses. A review of any responses then, selective responding by autistic children has been labeled stimulus overreactivity (see Dunlap, Koegel, & Burke, 1981, and Lovvans, Koegel, & Schreibman, 1978 for reviews).

Difficulty in establishing appropriate stimulus control can have obvious negative implications for the education and learning of autistic children. However, research conducted over the last decade has provided techniques for controlling relevant or irrelevant extraneous overreactivity problems. These techniques include within-stimulus prompting (Becker, 1979), contextual features (Beckman, 1975, Rincover, 1979), and specific cueing cues (Koegel & Zec, 1981, 1981). The work in this area illustrates the attention that must be given to the details of context of instruction with autistic children, and it suggests that the theory and methodology of Direct Instruction can be used to solve the problem of this solution.

Task Variation

The composition of instructional sessions in terms of the variety and type of tasks presented has been addressed by researchers in the areas of both Direct Instruction and autism. For example, Engelmann & Colvin (1983) recommended presenting familiar, well-learned tasks along with new, difficult tasks when the latter are initially presented in order to facilitate compliance and appropriate responding.

The use of several types of maintenance tasks has been investigated with autistic and other severely handicapped children. For example, (Rincover & Koegel, 1982) demonstrated that the presentation of a variety of or easy and or less complex tasks resulted in very low levels of visual behavior. Higher rates were obtained on the correct task. These studies support the use of a task-paced instruction method that reduces visual behavior and the inappropriate behavior of severely handicapped autistic children.

The three areas discussed above may be viewed as illustrations of the general applicability of effective instructional methods to training autistic children. In particular, they point out substantial overlap across Direct Instruction techniques and procedures developed for severely handicapped, autistic children. This similarity of teaching methods suggests that principles underlying effective instruction may be more influential in the process of learning than the specific characteristics of any particular student population.

As we acquire more and more knowledge about the education of children with autism, we find that their qualitative learning characteristics are not as dissimilar from other children as was once supposed. The techniques of responding may seem unusual and relatively difficult to influence, the educational principles that have been proven effective are based on principles that are common to all instruction. In recent years, our research has been on the tempts of empirically documented instructional approaches, such as Direct Instruction, applied to students at all levels, regardless of handicap.

References

Engelmann, S. Sequencing cognitive and academic tasks in R.D., the students of special education. Columbus, Ohio: Chartell Merrill, 1977.

DIRECT INSTRUCTION NEWS, SPRING, 1984

21
Microcomputers and DI

Samuel K. Miller, Contributing Editor
Editor's Note: Beginning with this issue, the ADI News will provide an article next to microcomputer technology and Direct Instruction. Future issues will feature articles written by experts in the field from the United States and abroad. If you are currently using microcomputers and would like to share your experience or viewpoint relative to Direct Instruction, please forward your manuscript to Sam Miller c/o the ADI News.

We are pleased to welcome Sam Miller to the ADI News staff as a contributing editor in the area of microcomputers and Direct Instruction. Sam has been an elementary and middle school teacher for the past ten years. He currently teaches at the Kennedy Middle School in Eugene, Oregon. Sam is a Ph.D. candidate in Curriculum & Instruction at the University of Oregon. Sam is co-author of the Curriculum Program (with Siegfried Engelmann) and co-author of Selecting and Implementing Microcomputers (with Ron Thorkildsen and Walt Stegal). "Using DI to Teach Computer Programming to Retarded Institutionalized Adolescents," Beesey, A., Maggs, L., and "Evaluation of Computer Software," Yachov & Coster, 1984. This article provides an overview of the teacher training dilemma. The next issue of the ADI News will present an article that describes a design for training teachers to use microcomputers that is consistent with the DI philosophy of instruction.

The Need for Training

Educators are sometimes criticized because they react to events rather than anticipate and plan for them. This criticism is valid in regard to the use of microcomputers in education. For years, experts warned that courses must be created; however, without systematic, continuous training, educators will probably under-utilize or misuse the equipment they have.

A recent article in the Wall Street Journal pointed to the extent of the many challenges. The development and purchase of educational software, the microcomputer's "fuel," must overcome limitations left over from the era of printed instructional materials. Learning to "pilot" or use the microcomputer for instructional purposes is a new and complex task. Educators need to clarify the meaning of computer literacy as it applies to training teachers how to use the microcomputer. If these accomplishments occur, then the microcomputer revolution has the potential to be a force of positive change in education.

References


Help Us Attract New Members

If you are attending any conventions that would likely attract persons interested in DI we will provide you with copies of this newsletter for distribution. Write Wes Becker at ADI indicating how many copies you will need.

Savings for New Members

Normal membership cover the period from September 1 to August 31. To encourage new members to join during this period of growth, new members joining between April 15 and August 31 will be credited with membership for the following school year (i.e., through August, 1984).

Advertising Policies and Rates

The Direct Instruction News will publish advertisements for materials (programs, books), training conferences, workshops, and services (consultation, evaluation) related to direct instruction. All proceeds from the sales advertising space will be used to help pay publication costs incurred by the ADI News. Rates are as follows:

<table>
<thead>
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<tr>
<td>Full page</td>
<td>$200</td>
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<tr>
<td>Half-page</td>
<td>$125</td>
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<tr>
<td>Quarter-page</td>
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22 DIRECT INSTRUCTION NEWS, SPRING, 1985
Corrective Reading (Continued from Page 1)

These remarkable findings are consistent with a number of other studies of the original Corrective Reading Program and its successor Decoding B. The failure of the students in regular English classes to make progress should be noted. Mainstreaming obviously is the answer at the secondary level when the students lack basic reading skills. In her discussion, Campbell writes:

“One of the real concerns for secondary school teachers is finding students with experience to teach reading. Many of the researchers (in her review of the literature) agreed that this is why successful reading programs for this age group are so difficult to find. ‘Corrective Reading,’ with its scripted lessons and exact rules, can be used by anyone willing to spend some time learning the method. This researcher had a one-half hour presentation and, with that and practice gained in an extended afternoon day class, used the program so that students had effective gains in reading. The results of this program extended that secondary schools committed to raising scores can successfully fit ‘Corrective Reading’ into all school reading programs as long as the size of the small groups stays below fifteen’ (Campbell, 1983, p. 150).

Reference

Campbell, M.L. A study of Corrective Reading as an effective and appropriate program for teaching delayed, low-handicapped secondary school students. Report presented at the Faculty of the School of Education, San Diego State University, May, 1983.

Table 2

<table>
<thead>
<tr>
<th>Subtest</th>
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Concept Learning – LD Students (Continued from Page 9)

acts), and knowledge systems (Engelmart & Carmini, 1982). The present research illustrates the intricate relationships between each of these areas.

The two major areas for our programs can benefit from concept teaching procedures like presenting minimally different positive and negative examples (Experiment 1) and asking strategy questions (Experiment 2). LD students may experience no benefit or even harm when these procedures are used. Further research is needed to determine how other instructional design procedures developed with non-handicapped students are not functional for LD students and, more importantly, how instruction can compensate for attention and cognitive deficits so that LD students can learn to benefit from these procedures. Of course, we may find that additional instruction is not the solution, but rather, quite different instructional procedures are needed. Research conducted on some other instructional design procedures (Gersten et al., 1982) lend support to instructional procedures that incorporate these procedures (Lakerby & Maggs, 1982; Gersten, in press) suggest that additional instruction may be the answer, but only further research can clearly resolve the answer.

References


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Tutoring Methods (Continued from Page 7)

rating). Similar values for class-wide peer tutoring were 4.3 and 4.7, teacher and students, respectively.

Teachers whose students used home tutoring reported they would use home tutoring in the next year (3.8) and parents thought the home program should also be offered in the next year (4.7). Parents did not report extreme difficulty finding time to tutor at home (3.5). Parents thought that their child enjoyed tutoring (3.8) and they reported that they intended to continue it on their own (4.2).

Students liked peer tutoring (3.6), however, not nearly as much as they thought it improved their reading ability (4.7). Their lowest rating was related to having their tutors identify and correct their mistakes (2.6).

Current research activities at Juniper Gardens are further expanding these techniques by focusing upon: (a) long-term achievement impact; (b) long-term effects of the facilitation of tutoring interventions, (c) development of peer group procedures for autistic students, and (d) studies of tutoring effects on reading comprehension.

Tutoring procedures appear to be promising means of increasing students’ performance. With our current research we will provide additional answers about maximizing the success of this technique.

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