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ABSTRACT

This paper provides an overview of Direct Instruction, an intensive instructional method for grades K-6 based on the theory that learning can be greatly accelerated if instructional presentations are clear, rule out likely misinterpretations and facilitate generalizations. Over 50 instructional programs have been developed based on this teacher-directed, linear approach to learning. Underlying assumptions of Direct Instruction include: (1) all children can be taught; (2) the learning of basic skills and their application in higher-order skills is essential to intelligent behavior and should be the main focus of an instructional program; and (3) disadvantaged students must be taught at a faster rate than typically occurs if they are to succeed in school. More recently, the curricula have been incorporated into a comprehensive school reform model known as the Direct Instruction Model, which includes all three programs--reading, language arts, and math--and affects nearly all school operations. The comprehensive model has been implemented in some 150 schools nationwide. The most widely recognized Direct Instruction program is Reading Mastery, a complete, stand-alone reading and language arts program for students in grades 1-6. Sections of the paper discuss background, philosophy and goals, program components, evidence of effectiveness, professional development and support, implementation, costs, considerations, contact information, and policy issues and questions. (Contains 17 references.) (SR)

Direct Instruction.

Direct Instruction

Background - Philosophy and Goals - Program Components - Evidence of Effectiveness
Professional Development and Support - Implementation - Costs - Considerations
Policy Issues and Questions - Resources

Topic or Category:
Grade Level: K-6
Target Population: At-Risk, General

OVERVIEW

Background and Scope:

In 1968, Direct Instruction was first implemented as part of Project Follow Through, a large-scale education initiative by the U.S. Office of Education. It has continued in states, districts and schools ever since. The program was developed by Siegfried Engelmann and his research colleagues at the University of Oregon. The first series, DISTAR (Direct Instructional System for Teaching and Remediation), was in reading and math and designed for K-3 children, particularly at-risk students and low achievers. The program was expanded and enriched under its second phase to include language arts and grades K-6.

The Direct Instruction program began in 12 school districts and now is used in hundreds of schools across the nation. More recently, the curricula have been incorporated into a comprehensive school reform model known as the Direct Instruction Model, which includes all three programs -- reading, language arts and math -- and affects nearly all school operations. The comprehensive model has been implemented in some 150 schools nationwide (Northwest Regional Educational Laboratory, 1998).

The most widely recognized Direct Instruction program is Reading Mastery, a complete, stand-alone reading and language arts program for students in grades 1-6. This program uses an explicit phonics approach and emphasizes students' ability to apply thinking skills in order to comprehend what they read. Another part of the Reading Mastery program is Corrective Reading, designed for students in grades 4-12 who are two or more grade levels below grade placement (Kentucky Department of Education, 1998).

Philosophy and Goals:

Direct Instruction is an intensive instructional method based on the theory that learning can be greatly accelerated if instructional presentations are clear, rule out likely misinterpretations and facilitate generalizations (Northwest Regional Education Laboratory, 1998). Over 50 instructional programs have been developed based on this teacher-directed, linear approach to learning. The developers of Direct Instruction believe certain basic skills and knowledge must be learned and mastered, especially if students are to advance to higher-order thinking skills.

The underlying assumptions of Direct Instruction include: (a) all children can be taught; (b) the learning of basic skills and their application in higher-order skills is essential to intelligent behavior and should be the main focus of an instructional program; and (c) disadvantaged students must be taught at a faster rate than typically occurs if they are to succeed in school (Engelmann et al., 1988; Block, et al., 1995).

The primary goal of Direct Instruction is to accelerate at-risk students' learning in the elementary grades and equip them to compete with their more advantaged peers (Engelmann et al., 1988). Direct Instruction aims not only to increase the amount of learning, but also its quality by systematically developing important background knowledge and applying and linking it to new knowledge (Block, et

al., 1995).

While the focus is on academic achievement, Direct Instruction also seeks to improve students' social behavior and emotional well-being by helping them succeed in their core content work.

Program Components:

The key components of Direct Instruction include the following:
A focus on mastery and application of the underlying, basic skills and knowledge that allow students to advance to higher- order skills (i.e., problem solving, critical thinking)
Scripted lesson plans that are written, field-tested in classrooms, rewritten and retested -- a cycle which ends only after 90% of students grasp a lesson after its first presentation
Curricula based on a sequence of skills and knowledge with each new level built on the previous one and introducing students to new concepts
Frequent assessments used (1) to ensure students are reaching mastery, (2) to detect students who might need extra help and (3) to identify students who need to be regrouped
Small-group sessions that include high levels of teacher-student interaction, coupled with independent work time
Rapid-paced, teacher-directed instruction, punctuated by rhythmic group and individual responses, reinforcement and corrections to help all children master each lesson plan
Use of trained classroom paraprofessionals (under the direction of certified staff) as instructional aides, one-on-one tutors and small-group leaders
Achievement grouping across grades to help students advance as quickly as possible; students can be reassigned to a faster group and or given immediate assistance if falling behind
Ongoing inservice and preservice teacher training that offers concrete solutions to classroom problems
Coordinated school schedules so the same subject is taught at the same time throughout the school, allowing students to be grouped across grades
High expectations for all students, reinforced by the progress made by at-risk students.

Evidence of Effectiveness:

Summary of Evidence:
An impressive research agenda has been carried out over the last 30 years on Direct Instruction programs. Numerous evaluations have been conducted, in the form of small- and large-scale, longitudinal follow-up and short-term studies. These studies have found significant positive effects on student achievement in reading, language arts and/or mathematics. Some high-poverty schools report average test scores at or above grade level -- in a few cases, several grades above (American Federation of Teachers, 1998).

Discussion of Evidence:
Impact on student results:
A 1996 analysis of research on Direct Instruction (Adams and Engelmann, 1996) suggest the approach can have a fairly large, positive influence on student learning (Texas Center for Educational Research, 1997).

In another recent effort, the U.S. Department of Education's Joint Dissemination Review Panel validated various education programs as exemplary and qualified them for national dissemination. Twelve districts submitted Direct Instruction Follow Through projects for validation, which represented a full range of students in large urban and rural districts and various ethnic populations. All projects were certified as exemplary in reading and math for the primary grades (Block et al., 1995).

"Project Follow Through" Studies:
As part of Project Follow Through, the U.S. Office of Education funded a $59 million project in 1977 to conduct a large-scale, longitudinal study of more than 20 different approaches to educating economically disadvantaged students. Two independent, impartial agencies - the Stanford Research Institute (SRI) and Abt Associates - were contracted to evaluate the various models' effectiveness in basic skills, cognitive skills and affective behaviors. The Direct Instruction Model produced the most desirable results in all

three areas (Ellis & Fouts, 1997). Direct Instruction students outperformed control-group students and students in other experimental programs in mathematics, reading and language, moving from the 20th percentile (the normal level of performance for children in poverty) to near the 50th percentile (American Federation of Teachers, 1998; Gersten & Keating, 1987).

Several follow-up studies reached similar results:
A Ford Foundation-funded evaluation of the SRI and Abt study resulted in several more in-depth analyses of the data generated by Project Follow Through. In those studies, Direct Instruction looked even better than in the SRI and Abt evaluation (see Adams and Engelmann, 1996, pp. 67-98, for a summary of these reports).
In a study of the long-term effects of DISTAR instruction on students in one Brooklyn elementary school (Meyer, 1984), DISTAR students had significantly higher 9th-grade reading and math scores (as measured by the California Achievement Test) than did a control group (Texas Center for Educational Research, 1997).

The results for special-education students have been mixed. A review of 25 studies with special education populations (White, 1988) showed favorable results for Direct Instruction, including the observation that not one research study favored the comparison group. In contrast, a 1990 study (Kudar) found that DISTAR did not necessarily lead to better achievement scores for students with learning disabilities.

Other Student Indicators:
The 1984 study of DISTAR instruction (Meyer, 1984) concluded that students receiving DISTAR instruction had (1) higher graduation rates, (2) higher successful college-application rates and (3) lower dropout rates. (American Federation of Teachers, 1998; Texas Center for Educational Research, 1997).

A 1987 study (Gersten and Keating, 1987) noted that high school students who received Direct Instruction in primary grades had lower dropout rates, higher test scores, and a higher percentage of college applications and acceptance. Further, two longitudinal studies on the effects of Direct Instruction (Gersten and Keating, 1987; Becker, 1988) favored Direct Instruction in educational outcomes such as graduation rates, dropout rates and college acceptance, as well as in measurements of achievement, especially reading (Ellis and Fouts, 1997).

Case Studies:
Wesley Elementary School of Houston, Texas, adopted Direct Instruction in 1975 as a pilot Title 1 reading program, then expanded the approach throughout the school. Despite factors often associated with low achievement (e.g., a high percent of minority and impoverished children), the school has ranked in the top tier of all Texas schools, outscoring comparison schools by more than 40 percentile points. Some Wesley classes have tested up to three years about grade level (American Federation of Teachers, 1998).

As part of Utah's Accelerated Student Achievement Project (ASAP) to improve poor-performing Title 1 schools, three elementary schools adopted schoolwide Direct Instruction programs during the 1994-95 school year. Preliminary data from a University of Utah study indicated that in grades K-2, the ASAP students scored far above national expectations and comparison schools in two subtests. After two years, one school moved from last to second place (out of 24 schools) in the district's annual Math Olympics (American Federation of Teachers, 1998; Kentucky Department of Education, 1998).

Impact on teaching: No information available

Changes in organizational climate and structure: No information available

Impact on parents/community:
While Direct Instruction programs do not always emphasize parent and community involvement, an analysis of the Follow Through parent data for all models (Haney, 1977) found moderate to high parent involvement in all Direct Instruction school districts. These parents viewed school as not only helpful to their children but also to themselves, particularly in terms of learning about teaching, learning how to

help at home with their children's schoolwork, understanding better how their children learn, and meeting other parents. In comparison to parents whose children were involved in other Follow Through projects, parents of Direct Instruction students felt school had appreciably helped their children academically (Block et al., 1995).

In some schools, parent workers are used to (1) encourage other parents to be teachers of both academic and social behavioral skills, (2) reduce absenteeism and (3) provide a liaison between families in need and social service organizations (Engelmann, et al., 1988).

Professional Development and Support:

As with implementation, the type and extent of professional development can vary across schools. Ideally, professional development for Direct Instruction programs includes the following activities:
An initial two-to-four-day training session which focuses on learning strategies unique to the programs
Weekly inservice and collaborative practice sessions during the first three months of school during which teachers can practice and provide feedback on presentation techniques
Classroom observations and demonstrations that provide support for individual teachers
Group meetings held periodically throughout the first two years of implementation to provide networking opportunities and support for teachers implementing the programs
Teacher-peer coaches to provide additional on-site support for teachers (Kentucky Department of Education, 1998).

These services can be contracted from a Direct Instruction provider (see below), from a local person trained in implementing Direct Instruction or a combination of both strategies.

The Association for Direct Instruction (ADI) is a nonprofit organization that provides support for teachers and other educators who use Direct Instruction programs, and offers several regional conferences and implementation workshops during the year. Additionally, ADI publishes the quarterly journal, *Effective School Practices.* The Center To Support Quality Direct Instruction is a division of ADI charged with ensuring that schools successfully begin and continue implementation of Direct Instruction by providing technical assistance and advice throughout the process. The center works primarily with schools that adopt a comprehensive schoolwide approach to Direct Instruction.

The National Institute for Direct Instruction is a nonprofit corporation that provides technical assistance and training to schools as they implement the program schoolwide (including the reading, language arts and math programs). The institute also provides a project director and implementation manager, trains a peer coach and processes the school-level data submitted weekly (e.g., student achievement and progress reports). In addition, the institute provides districts with a training program in Direct Instruction methodology. Project directors work with five or six schools and interact primarily with school administrators to ensure that training needs are met and the program is implemented successfully. Implementation managers are assigned to one school and address problems teachers are having in the classroom, propose specific solutions, monitor progress and help manage the grouping of students. One of the school's teachers serves as a peer coach to help teachers with the Direct Instruction program, eventually taking over as the key contact after the five-year contract with the institute ends.

Implementation:

No standard implementation strategy exists for Direct Instruction since schools adopt the program in a variety of ways, from single subject to comprehensive schoolwide reforms. For example, schoolwide implementation can mean using all three subject areas (reading, language arts and mathematics) throughout the school or using at least one subject throughout the school or in several grades. In comparison, some schools will use one subject for just one grade (i.e., Reading Mastery in 2nd grade). Many Direct Instruction providers recommend a schoolwide strategy to promote a more consistent approach to teaching and learning, to make use of the sequenced lesson plans and to coordinate class schedules throughout the school.
Schoolwide Implementation:
Requirements for implementing Direct Instruction as a comprehensive schoolwide model include:

The district superintendent recommends the school and commits to full program implementation for all students -- a five-year agreement.
The principal agrees to implement daily schedules, instructional programs, grouping and management procedures, and a two-to-three-year timetable for implementing all programs and procedures in all grades and including all students.
The teachers agree and commit to following specified daily schedules, grouping students for instruction, attending scheduled preservice and inservice training, receiving in-class monitoring and classroom assistance, and using program-specific instructional materials (Laboratory for Student Success, 1998).
The general goal is to implement all K-6 classes by the second year of implementation. During the third through fifth years, students in all subject areas should be accelerated as much as possible (Laboratory for Student Success, 1998). Direct Instruction developers estimate the full process of implementing all curricular areas can take three years or more (Northwest Regional Educational Laboratory, 1998). If a school is to implement Direct Instruction on a schoolwide basis, then 80% of teachers must "buy-in," agreeing to follow program specifications and not to use other instructional programs that conflict with the Direct Instruction approach (Northwest Regional Educational Laboratory, p. 52). To facilitate cross-class grouping, schools must coordinate schedules so all teachers at a particular grade level are teaching major subjects at the same time.

Additionally, results from the student assessments should be reviewed weekly by a school team (consisting of the principal and a few teachers) and used to make decisions about student needs and teacher effectiveness. If the school has contracted with a major Direct Instruction provider (see Professional Development and Support below), student data usually are submitted weekly to the provider so they can analyze the results, track progress, assess effectiveness and make necessary recommendations for more successful implementation.

If a school uses Direct Instruction on a more limited basis, full staff buy-in is not required. The school can purchase any materials, for any subjects and grades. Under these circumstances, the school staff can decide how much professional development to offer and how to use student assessment results.

Direct Instruction materials are commercially published and can be purchased from McGraw-Hill for individual grades and subjects or as a larger package for a schoolwide program.

Costs:

Costs for implementing Direct Instruction depend on whether a schoolwide or single subject-matter approach is used.

Schoolwide Implementation:
For comprehensive schoolwide implementation, training services by a Direct Instruction provider usually cost between $50,000 - $65,000 per year for the five-year commitment. This covers contracted days for the project director, the implementation manager, the processing of school data submitted weekly and some materials. Curricular materials are purchased separately from McGraw-Hill for approximately $125 per student.

Additionally, schools must cover release time for teachers and coaches throughout the school year for professional development activities (Northwest Regional Educational Laboratory, 1998). If a school does not use all three subjects across all grades, then implementation costs will be less and vary according to how many subjects are used and for what grades, how many materials the school must purchase and what the staff's professional development needs are.

Single-Subject Implementation:
For the Reading Mastery program alone, the cost is $60 per student and $300 per teacher for core materials. The first-year average cost for Corrective Reading is $65 per student and $130 per teacher for core materials. Second-year costs are $20 per student for Reading Mastery and $12 per student for Corrective Reading. There are no additional costs for teacher materials after the initial year (American Federation of Teachers, 1998; Kentucky Department of Education, 1998). The cost of materials for other subjects is fairly comparable to Reading Mastery. Professional development costs vary according to the

needs of the staff, the number of subject areas and grades involved and the extent of professional development services the school decides to adopt.

Considerations:

Direct Instruction is not for all children under all circumstances or for all teachers or schools. The program's strength seems to be in helping elementary students attain basic skills and knowledge and build a foundation for higher-order skills. Direct Instruction also tends to work better for low-achieving students, especially from economically disadvantaged backgrounds.

The lack of consistency across schools in terms of implementing Direct Instruction (from a comprehensive schoolwide to a single subject/single grade approach) and offering professional development (limited to extensive opportunities) can make it difficult to get an overall sense of the program, fairly assess its effectiveness and ensure uniform quality of implementation across schools.

Two primary concerns have been raised about Direct Instruction. First, the program has been criticized for being too structured, concentrating too heavily on the basics, and stifling student and teacher creativity. Second, some school staffs have mistakenly believed that the highly scripted lesson plans can be a substitute for adequate professional development, an attitude that may contribute to criticisms that Direct Instruction is "teacher proof."

"Critics . . . argue that Direct Instruction is 'old-fashioned,' that it is too much work for the teacher, that it is more tiring, too regimented, and promotes passive and rote learning. To rebut these charges, to the extent that they are even made, there is no evidence offered; in fact, one seldom finds *any* written criticism from the critics. The many teachers we have talked to about Direct Instruction often point out that it is so regimented as to stifle their creativity. This is an interesting statement, to say the least. They reject it not because it doesn't work, but because it stifles their creativity. But it could at least be argued that teacher creativity is not the end product of schooling, student learning is" (Ellis & Fouts, 1997, p. 218).

Policy Issues and Questions:

Should state policymakers help districts and schools identify and select instructional programs that best meet their students' diverse needs?
Should states establish an information clearinghouse to help districts and schools clarify information about various instructional programs, including the supporting evidence on student results, the most appropriate situations to adopt such programs and how to successfully implement the programs?
What role can states play in evaluating the quality and effectiveness of various instructional programs?
Should states provide funding for independent evaluations of the impact of programs?

Resources:

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