

## WHAT IS DIRECT INSTRUCTION?\*

The Direct Instruction model is the most carefully developed and thoroughly tested program for teaching reading, math, writing, spelling and thinking skills to children. Direct Instruction, or DI, was begun by Siegfried Engelmann and Wesley Becker at the University of Illinois in the 1960s. Engelmann, Doug Carnine, Bonnie Grossen, Ed Kame'enui, Jerry Silbert and others further developed it at the University of Oregon. Research and development on the model continues today by researchers and classroom teachers throughout the country. Two major rules underlie DI: "Teach more in less time." and "Control the details of the curriculum."

Teaching "more in less time" recognizes that even if low-achieving students, disadvantaged students and those with disabilities are taught by an effective program that enables them to progress at the *same rate* as their peers, they will always remain behind. Only by teaching at a *faster rate* can the achievement gap be reduced (Kame'enui & Simmons, 1990). The design of the details of the curriculum--the selection and sequencing of instructional examples--is at the heart of the Direct Instruction model.

**High Rates of Student Engagement** - Although some DI programs are designed for whole-class instruction, early reading DI lessons are typically conducted with *small groups* of children (5 to 10), which is more efficient than one-to-one instruction and allows more teacher attention and feedback and individualization than large group instruction. High rates of active student response are generated by having students *chorally respond* in unison to a *rapidly paced* series of teacher-presented items (Carnine, 1976; Heward, Courson, & Narayan, 1989). Individual turns are interspersed within group responses. To help both the pacing and the simultaneous participation by all students, teachers use *signals* (e.g., hand movements, claps) to cue the students when to respond.

**Immediate Feedback** - Correct responses by are *praised*, and materials have been designed so that students are correct 70% of first-time responses (Engelmann, 1997). All errors are corrected immediately via a *model-lead-test* procedure that ends with the student making the correct responses. This *firming* continues until the student(s) who erred responds correctly and independently. A good DI teacher does not move to the next task in a lesson (or from one lesson to the next) until the students have demonstrated their mastery of the current task (or lesson).

**Scripted Lessons** - Scripts indicate what the teacher should do and say for each item or task in the lesson. *Scripted lessons* ensure consistent, quality instruction across teachers. Scripting also helps reduce the amount of unnecessary teacher talk. The developers of DI found that children learn best by working through a sequence of tasks with carefully timed comments from the teacher. Children learn little from listening to teacher talk. Too much teacher talk often causes confusion by changing the focus of the tasks, thereby hampering students' acquisition of the larger generalization. It also draws out the length of the lesson unnecessarily, and reduces the number of practice trials experienced by students--when the teacher is talking, students are not responding, and students learn the most when they are actively responding (Fisher et al., 1980; Heward, 1994).

\* From *Exceptional Children: An Introduction to Special Education* (6<sup>th</sup> ed.) by William L. Heward (2000) (pp. 272-273). Upper Saddle River, NJ: Merrill/Prentice Hall.

The scripted presentations are part of the whole lesson, and the DI lessons are part of the whole school day. The lessons also include opportunities for group and independent work. A good DI teacher also creates additional activities that allow students to make use of their learning in various situations.

**Learner-Tested Curriculum Design** - A first-time observer of a well-taught DI lesson is immediately struck by the high-energy level: the rapid pacing, the teacher's use of verbal and visual signals, and the children's choral responding stand out readily from typical teaching methods. But the casual observer is seldom aware of the curriculum design—the selection and sequencing of instructional examples—that is at the heart of DI.

Direct Instruction is an intensive intervention designed to increase not only the amount of learning but also its quality by systematically developing important background knowledge and explicitly applying it and linking it to new knowledge. Direct Instruction designs activities that carefully control the background knowledge that is required so that all students can "build hierarchies of understanding," not just those students who come to school with the appropriate background knowledge. In the process, mechanistic skills evolve into flexible strategies, concepts combine into schemata, and success in highly structured situations develops into successful performance in naturalistic, unpredictable, complex environments. (Carnine, Grossen, & Silbert, 1995)

Curriculum examples are selected and sequenced based on the finding that if children could respond perfectly to a smaller set of carefully engineered tasks, they would generalize their learning to new untaught examples and situations (Engelmann & Carnine, 1982). For example, children who learn to spell 600 word parts called "morphographs" and 3 rules for connecting them can spell 12,000 words. Children who rehearse the 600 word parts and 3 rules to a level of automaticity can spell any of the 12,000 words with ease.

DI designers test the programs carefully before publishing them, just as aeronautic engineers test airplanes before selling them. Each DI program is extensively field tested and revised based on student performance data. The goal is to include every piece necessary to make the lessons successful.

DI curriculum materials are available for teaching reading (Engelmann & Bruner, 1988), mathematics (Engelmann & Carnine, 1991), and language arts (Engelmann & Silbert, 1993) in grades K-6. There is even a DI program that parents can use to teach preschoolers to read called, *Teach Your Child to Read in 100 Easy Lessons* (Engelmann, Haddox, & Bruner, 1983). Recent textbooks provide teachers with thorough explanations and examples of how to apply DI curriculum design and instructional principles to teaching reading (Carnine, Silbert, Kame'enui, & Tarver, 1998) and math (Stein, Silbert, & Carnine, 1997).

**Powerful Results** - The effectiveness of DI is supported by an impressive body of research. An evaluation of the Direct Instruction model was conducted by the nationwide Follow Through program and involved more than 8,000 children in 20 communities who were taught by one of nine different educational models. (Follow Through is a

nationwide, comprehensive educational program for economically disadvantaged children, kindergarten through third grade. Many Head Start children enter Follow Through programs.) Children who participated in the DI model made significant gains in academic achievement, catching up to or even surpassed the national norms on several arithmetic, reading, and language skills (Bock, Stebbins & Proper, 1996; Gersten, Carnine, & White, 1984). None of the other eight educational approaches evaluated by the Follow Through program was nearly as effective as DI. Perhaps even more impressive are the results from two follow-up studies showing long-term benefits of DI. When they were in high school, the children who had participated in DI through the third grade had higher graduation rates (60% to 40%), lower dropout rates, more promotions to the next grade, and more acceptances to college than a comparison group of children with similar disadvantaged backgrounds (Darch, Gersten, & Taylor, 1987; Meyer, Gersten, & Gutkin, 1983). All of these differences were statistically significant. For more information on the effectiveness of DI, see Adams and Engelmann (1996) and Weisberg (1994).

**Myths and Misconceptions** - There are many myths and misconceptions about Direct Instruction (Engelmann, 1997; Tarver, 1998). Here are four:

- Ω *DI is good for teaching decoding and word recognition, but it does not improve reading comprehension or instill a love of books* - Wrong. Because they have learned to rapidly and effortlessly decode printed text, DI students are able to concentrate on the meaning of authentic literature, thereby enjoying and truly benefiting from whole language activities (Carnine et al., 1998).
- Ω *DI relegates the teacher to a person who simply reads a script*. Two points are pertinent in responding to this myth. First, just "reading the script" will not teach students anything. Even though DI programs are carefully tested and scripted, there is nothing simple about using them successfully. Good DI teachers must learn special presentation techniques and must make many "on-the-fly" decisions in response to the children's performance. Second, while scripts are used by other highly-skilled professionals--surgeons and musicians to name just two--for some reason the education profession expects teachers to create their own method of instruction. Imagine how (un)comfortable you would feel if the pilot of your next flight decided to experiment with a "new idea" for landing the plane. Yet everyday teachers experiment with the futures of children by trying first one approach, then another.
- Ω *DI is effective for teaching rote memory skills, but it does not teach higher-order thinking skills or problem solving*. Not true. DI curriculum design principles have been used successfully to teach higher order skills such as deductive and inductive reasoning in history, literary analysis, chemistry, earth science, legal reasoning, problem solving, critical thinking, and ratio and proportions (Kame'enui, Carnine, Dixon, Simmons, & Coyne, 2002).
- Ω *DI has a detrimental effect on students' self-esteem and on their attitudes toward learning*. In fact, the data from the nationwide Follow-Through study show just the opposite is true. *Children in DI programs had the highest scores on measures of self-concept*; higher even than the programs designed to enhance self-concept (Watkins, 1996). This is not surprising. Children who are competent readers, writers, and math

calculators are more likely to feel good about themselves than are children whose academic difficulties make each day in school a hardship.

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