What Is Direct Instruction?

The Direct Instruction (DI) model is the most carefully developed and thoroughly tested program for teaching reading, math, writing, spelling, and thinking skills to children. Siegfried Engelmann and Wesley Becker developed DI at the University of Illinois in the 1960s. It was further developed by Engelmann, Doug Carnine, Bonnie Grossen, Ed Kameenui, Jerry Silbert, and others at the University of Oregon. Research and development on the model continues today throughout the country. Two major rules underlie DI: (1) teach more in less time, and (2) control the details of the curriculum.

Teaching more in less time recognizes that even if students with disabilities are taught by an effective program that enables them to progress at the same rate as their nondisabled peers, they will always remain behind. Only by teaching at a ***faster rate*** can the achievement gap be reduced (Kameenui & Simmons, 1990).

High rates of student engagement. Although some DI programs are designed for whole-class instruction, DI is typically conducted with 5 to 10 children, which is more efficient than one-to-one instruction and allows more teacher attention, feedback, and individualization than does large-group instruction. High rates of active student response are generated by having students chorally respond (in unison) to a rapid 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 of all students, teachers use signals (e.g., hand movements, claps) to cue students when to respond.

Immediate feedback. Correct responses are praised, and materials have been designed so that 70% of first-time responses are correct (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.

Scripted lessons. Scripts indicate what the teacher should do and say for each item or task in the lesson. They ensure consistent, quality instruction across teachers and help reduce the amount of unnecessary teacher talk. DI developers found that children learn best by working through a sequence of tasks with carefully timed comments from the teacher. They learn little from listening to teacher talk, which 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. When the teacher is talking, students are not responding, and students learn most when they are actively responding.

Scripted presentations are part of the whole lesson, and DI lessons are part of the whole school day. Lessons also include opportunities for group and independent work. A good DI teacher 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 its high energy level: rapid pacing, the teacher's use of verbal and visual signals, and the children's choral responding stand out from typical teaching methods. But the 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 respond perfectly to a smaller set of carefully engineered tasks, they generalize their learning to untaught examples and situa-

tions (Engelmann & Carnine, 1982). For example, children who learn to spell 600 word parts called morphographs and know three rules for connecting them can spell 12,000 words. Children who rehearse the 600 word parts and three 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. 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, 1992), and language arts (Engelmann & Silbert, 1993) in grades K to 6. There is even a DI program that parents can use to teach preschoolers to read: ***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, & Kameenui, 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 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 models. (Follow Through is a nationwide, comprehensive educational program for economically disadvantaged children, grades K to 3. 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 surpassing 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 DI (Engelmann, 1997; Tarver, 1998). Here are four:

- ***DI is good for teaching decoding and word recognition but 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, Silbert, & Kameenui, 1998).
- ***DI relegates the teacher to a person who simply reads a script.*** Wrong. 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 make many on-the-fly decisions in response to the children's performance. Second, while scripts are used by other highly skilled professionals (e.g., surgeons and musicians) for some reason the education profession expects teachers to create their own method of instruction. Imagine how comfortable you would feel if the pilot of your next flight decided to experiment with his "new idea" for landing the plane. Yet every day teachers experiment with the futures of children by trying first one approach, then another.
- ***DI is effective for teaching rote memory skills but does not teach higher-order thinking skills or problem solving.*** Wrong. 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 (Kameenui & Carnine, 1998).
- ***DI has a detrimental effect on students' self-esteem and their attitudes toward learning.*** Wrong. In fact, data from the Follow-Through study show just the opposite. Children in DI programs had the highest scores on measures of self-concept, higher even than 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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