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THE EFFECT OF DIRECT INSTRUCTION ON SELF-CONCEPT

Review by Dennis Rose

INTRODUCTION

Teachers and parents generally agree that there is a relationship between children's self-concept and their achievement at school. The precise nature of that relationship remains unclear. From one perspective, it is possible to argue that children with low self-concepts have difficulty learning, especially when they have low self-concepts about their academic ability. It follows that raising children's self-concepts should improve their learning. The opposite view is that high self-concepts are caused by high achievements. According to this view, raising children's achievement should result in their attaining higher self-concepts.

REVIEW OF RESEARCH

Surprisingly little research has been conducted on the relationship between achievement and self-concept. One exception is Marsh (1992) who found that achievement is likely to cause an increase in self-concept and not the other way round. Scheirer and Kraut (1979) reached the same conclusion. The general conclusion from both studies is that attempts to improve academic achievement by raising self-concept alone are misguided. Scheirer and Kraut's conclusions were derived from the results of a major compensatory education programme, *Project Follow Through*, that began in the USA in the 1960s.

Project Follow Through examined the effects of 22 different educational models. These models included parent education programmes, programmes designed to improve self-concept, programmes based on theorists such as Piaget, and Direct Instruction. Data from over 10,000 children taught through one of the models and from thousands of other children in the comparison control groups was analyzed to identify which models were the most effective. Bock, Stebbins, and Proper (1977) concluded that most models compared badly with their comparison schools in which children received routine education.

The Direct Instruction model was superior to all other models on all measures. Children taught using this model easily outperformed their controls in basic skills, cognitive skills and affective functioning. The remainder of this paper briefly describes Direct Instruction, presents some of the research showing Direct Instruction's effectiveness in raising achievement and self-concept, and suggests some implications for teachers.

What is Direct Instruction?

Direct Instruction combines careful design of materials with direct teaching methods. Direct Instruction materials provide:

- explicit teaching of facts;
- rules and strategies;
- selection and sequencing of examples to illustrate concepts; and
- prompts for children to gradually apply strategies silently and independently.

Direct Instruction teachers use brisk pacing,

immediate error correction, small group instruction, and choral responding (Kinder & Carnine, 1991).

RESEARCH ON DIRECT INSTRUCTION

Bereiter and Kurland's (1981) analysis of *Project Follow Through* found that Direct Instruction produced statistically significant gains over controls in 65% of the comparisons. The next best model, Behavior Analysis, produced statistically significant gains over controls in 23% of the comparisons. No other model showed any statistically significant gains over controls on any of these tests. In other words, only two models, Direct Instruction and Behavior Analysis, produced significant gains in basic skills and in cognitive skills. Direct Instruction was one of four models that produced statistically significant positive outcomes on affective measures such as self-esteem. All other models, including all three affective skills models, produced statistically significant negative outcomes on affective measures. Children in these programmes fared poorly on affective measures compared to children in comparison schools.

Some children who had participated in the Direct Instruction model in *Project Follow Through* were followed up in several sites. Children taught in the Direct Instruction model were academically superior to their controls at 9th grade (Meyer, 1984; Gersten, Keating, & Becker, 1988). A greater number of them graduated from high school (Darch, Gersten, & Taylor, 1987) and were accepted for and remained in college education (Meyer, Gersten, & Gutkin, 1983). The effects of early Direct Instruction were sustained.

Research since *Project Follow Through* continues to demonstrate the power of Direct Instruction. A frequently cited example is Wesley Elementary School in Houston, Texas, which introduced Direct Instruction in 1975 and moved from being one of the lowest achieving schools to regularly surpassing average statewide scores in regular academic tests (Rimes, 1997). Another example is Morningside Academy (Johnson & Layng, 1992) where average annual gains range from 1.6 to 3.9 grades. Morningside has also provided programmes to adult groups such as young, at-risk African-American males and Asian-American women. Students in these programmes typically progress one grade for every 15 to 25 hours of instruction.

White's (1988) meta-analysis of Direct Instruction in special education found that over half of the measures significantly favoured the Direct Instruction groups while no measure in any of the studies favoured the comparison group. Adams and Engelmann's (1996) review of 34 studies of the effects of Direct Instruction found that 32 studies had a positive effect on child achievement. These studies examined Direct Instruction in language, reading, mathematics, spelling, health and science programmes.

Direct Instruction has recently received endorsement from several educational organizations. The National Education Association, the American Association of School Adminsitrators, the American Federation of Teachers, The National Association of Elementary School Principals, and the National Association of Secondary School Principals collaborated in research to evaluate 24 instructional models according to whether they measurably improved achievement. Only

three models were rated as having strong evidence that they produced positive effects on child achievement (Olsen, 1999). One of these models, Direct Instruction was being used in 150 schools. Eight of the models had no research backing at all, despite being used in over 660 schools and over 1,000 schools were using programmes that had only weak evidence of their effectiveness.

Research continues to demonstrate that Direct Instruction has a positive effect on self-concept. Adams and Engelmann (1996) reported on four studies that used affective measures, such as measures of self-concept. They all found that Direct Instruction had positive effects on self-concept. McCormick and Fitzgerald (1997) reported that children were overwhelmingly positive about the programme and rated themselves as competent spellers after participating in a Direct Instruction programme, *Spelling Mastery*. Teachers also made overwhelmingly positive comments about the programme and their children's positive response to it. Fisher, Kitz and Tarver (1996) reported that children receiving a Direct Instruction videodisc geometry programme performed better than children instructed using a basal programme and rated the Direct Instruction programme more highly than did the children receiving the basal programme.

CONCLUSION

The research is unequivocal: Direct Instruction is associated with superior academic performance. Children whose achievement levels increase as a consequence of a Direct Instruction programme, are also likely to have improved self-concepts and cognitive skills. Despite a widespread belief that Direct Instruction may impede the development of cognitive skills and affective functioning, the opposite is the case.

IMPLICATIONS FOR TEACHERS

The main implication for teachers is that the best way to make children feel good about themselves in school is to increase their achievement. Direct Instruction is a proven method of doing this.

Teachers can get started with Direct Instruction in two main ways. The easiest way is to purchase Direct Instruction programmes that provide teaching materials, teacher scripts and child workbooks. Commonly used programmes of this type are *Reading Mastery*, *Reasoning and Writing*, and *Spelling Mastery*, all published by SRA.

The second way that teachers can use Direct Instruction is to adapt their own curriculum and teaching methods. First, teachers must organize what they teach so that children learn basic skills and knowledge before being required to perform more complex tasks. This improves their chances of success

and, therefore, their motivation to learn. Secondly, teachers should provide for a great deal of involvement; children rarely learn much when sitting passively. A simple guide follows.

1. ***Teach content in a sequence that ensures success***
   Teach basic material before combining more complex knowledge forms.
2. ***Make brief presentations of content and have children respond to questions during the presentation.***
   For example: "*A triangle has three sides. How many sides does a triangle have?*"
3. ***Use examples and non-examples to illustrate facts and concepts.***
   For example: *"This is a triangle. This is not a triangle. Is this a triangle?"*
4. ***Ensure that positive examples vary on irrelevant attributes***
   For example, different colours, sizes, textures.
5. ***Provide "thinking time" before signaling that everyone should answer or calling on a single pupil to answer.***
6. ***If children make errors, correct them immediately and guide them to respond correctly.***
7. ***Maintain a fast pace. Do not allow time for wandering attention.***
8. ***Follow presentations with guided practice on what has been presented.***
   During this time, quickly check for mastery.
9. ***Set independent practice for children who have mastered the knowledge or skills.***
   Reteach children who have not achieved mastery and then provide more guided practice.

More detailed instructions and examples of how to design and teach a Direct Instruction programme may be found in Carnine, Silbert, and Kameenui (1990), Kameenui and Simmons (1990), and Stein, Silbert, and Carnine (1997).

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