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STIMULUS CHANGE: REINFORCER OR PUNISHER? REPLY TO HURSH

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To answer the question Hursh poses, we would have to say that NCLB presents an opportunity for those who support data-based decision making and science-based pedagogy and does not present an undue risk of guilt by association. Were Zig Englemann and Wes Becker guilty because they were associated with Head Start/Project Follow Through, because progressive educators criticized them, the government declared that the Follow Through experiment was a failure, and progressive educators choose not to be their colleagues (Grossen, 1995)? We think not. In opposing the intellectual status quo in education, it is almost a certainty that one's views will be attacked by progressive educators who attack because good news about non-progressive methods is bad news for progressive ideology. Even knowing that the implementation of NCLB is uncertain, we still support it. The key directions of the law are favorable, although they may or not be well implemented.

TEACHER TRAINING OPPORTUNITIES

We are reinforced by the opportunities that NCLB presents. The contingencies in NCLB may prove to be sufficiently motivating for schools to seek out those with expertise in science based pedagogy. Training in effective pedagogy is a key element to meeting the goals of NCLB. Largely, university-based training in colleges of education continues to focus on progressive education pedagogy and ideology. These approaches do not agree with the traditional idea of scientific evidence based practice. "For example, scientific research for the progressivist-contructivist does not mean controlled, replicated research using validated instruments, but instead means qualitative note-taking, because this definition enables the progressivist-constructivist (in his or her mind) to make no changes in how he or she thinks" (Kosloff, 2003, p.16). The result is a science-based pedagogy vacuum with few teachers being produced who actually have been trained in using science-based pedagogy. This vacuum presents opportunities for training teachers in non-college settings for those who possess science based pedagogy expertise.

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OPPORTUNITIES FOR SUPERVISION AND ADMINISTRATIVE SYSTEMS

Many other opportunities for behavior analysts exist to improve instructional outcomes. Most schools do not have an effective means of supervising the academic program. Someone who is familiar with the nuts and bolts of a given model is an invaluable resource in solving individual student learning problems as well as troubleshooting implementation problems. Administrators seldom check on how individual students are performing and how individual teachers are teaching. In an elementary school it should be possible for a supervising teacher/administrator to check the data of each and every student and watch each teacher teach once every three weeks. The organization of effective supervision of an academic program is an often overlooked feature of successful program implementations. We agree with Hursh that collaborative consultation is an excellent strategy for increasing faithful implementation of an educational model and it provides a means to troubleshoot any problems that might develop.

OPPORTUNITIES FOR SCIENTIFICALLY VALIDATED DESIGNED INSTRUCTION

Results from the not too distant past and the present suggest the power of designed-instruction. Skinner (1958) started a revolution of instructional technology influencing many within the behavior-analytic community. This revolution had three basic features: designed instruction, scientific validation and mechanical delivery systems. With Distar, Siegfried Englemann and colleagues followed in Skinner's footsteps with the highly effective Direct Instruction design techniques using careful content analysis, logical analysis and behavior analysis. Michael Maloney (1987) produced instructionally-designed, computer-delivered basic math instruction combining elements of Direct Instruction and Precision Teaching. Kent Johnson and colleagues at the Morningside Academy have produced instructionally designed materials for reading and math using elements of Tiemann and Markle's instructional frame and content analysis (Markle, 1990; Tiemann & Markle, 1990), Direct Instruction, and Precision Teaching (Johnson & Street, 2004). More recently Headsprout instructional designers have designed effective online computer-delivered beginning reading programs (Headsprout, 2006).

We believe that designed instruction, particularly designs using computer platforms, offer great promise for improving American education. Here too we see great opportunity stemming from NCLB for those in the scientific instructional design field. However, designed instruction is likely to be rejected by progressive educators because it (a) uses bottom-up content analysis, (b) is sold commercially, the designer rather than the teacher may get credit for student learning, (c) will be seen to limit a teacher's creativity, (d) teaches content and skills rather than vague processes, and (e) fails to conform to the political views of critical pedagogy.

Not all computer-based learning products or even designed instructional products are effective in teaching students. Any computer-based instruction product is only as good as the instructional design within it. There are many poorly designed computer-based instructional products. Like any instructional product or model only scientific

demonstration of effectiveness is an assurance of quality. It is important that the scientific evidence requirement be maintained. In the 1960's, commercial companies who mimicked the instructionally designed and validated programmed instruction products wounded the technology by looking like the real thing but without producing the expected positive results because the companies failed to verify their programs' effectiveness before releasing their products.

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