Translating Research into Widespread Practice: The Case of Success for All

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October, 2004

This paper was written under funding from the Institute of Education Sciences, U.S. Department of Education (Grant No. R-117-D40005). However, any opinions expressed do not necessarily reflect the positions or policies of IES, and no official endorsement should be inferred.

The difficulty of translating research into practice in education is one of the most important problems in education reform. The problem is not so much that educators are resistant to change; on the contrary, certain kinds of innovation can be widely adopted, and educators are sure to cite research to support whatever innovation they advocate. Yet the connection between the findings of research and the practices of educators more resembles the faddism of art or fashion than the steady progress over time characteristic of medicine, agriculture, or technology (see Slavin, 1989). Educational innovations often appear and become widespread entirely in the absence of research. Research eventually appears on these innovations, but whether the research supports or fails to support the innovation, interest in it declines within a few years.

In 1987 my colleagues and I developed Success for All, a program that was designed in large part to try to break through the barrier between research and practice by building a well-specified, comprehensive approach to schoolwide practice in high-poverty elementary schools that would both be based on the best research available and would then be subjected to rigorous experimental evaluations. From the outset, the idea was to provide educators with every support they needed—student materials, teacher's manuals, training, followup, and school organization—to enable them to make daily, high-quality, thoughtful use of the findings of research. This chapter describes the history of this attempt to translate research into practice, the obstacles encountered, and the findings of research and experience with the program.

Success for All: An Intellectual History

The origins of Success for All reach back more than a decade before we began the first Success for All school in 1987. In particular, the development of Success for All was deeply rooted in experience with cooperative learning. Cooperative learning methods, in which students work in small groups to help one another master academic content, had begun to be researched by several investigators around the world in the mid-1970's (see Slavin, 1995; Slavin, Hurley, & Chamberlain, 2003; Johnson & Johnson, 1998; Sharan & Sharan, 1992). These methods became immensely popular in the 1980's; a national survey in the early 1990's found that 79% of third grade teachers and 62% of seventh grade teachers reported frequent use of cooperative learning (Puma et al., 1993). In many ways, cooperative learning was a success story in translating research into practice. By 1995, I was able to identify 99 studies of at least four week's duration in elementary and secondary schools that evaluated effects of various cooperative learning methods on student achievement. Here, for once, was a popular educational innovation that really did have a strong research base, affecting millions of children.

Yet the success of cooperative learning as an example of research affecting practice was as much appearance as reality. By the early 1980's, it was clear from dozens of studies that there were conditions under which cooperative learning was or was not effective for achievement (see Slavin, 1983). When cooperative methods put children into small groups and gave them a clear goal that they could only achieve if all group members had mastered the academic material, then cooperative learning improved student achievement. If, on the other hand, it was possible for one student in a group to get an answer and give it to their groupmates, or for one or two students to do the thinking part of a group task while others watched, cooperative learning didn't work. A series of ingenious studies by Noreen Webb and her colleagues (see Webb & Palincsar, 1996)

found that students who gave and received elaborated explanations gained from cooperative learning, while those who just received the answer (or no response) did not profit from the experience. Clearly, cooperative learning has to be set up in such a way as to ensure that students see the goal of the activity as explaining content to teach other, not simply coming to a single right answer or completing a project together.

While there was some disagreement about the specific conditions under which cooperative learning did or did not enhance achievement, by the mid-1980's, influential researchers in this field were generally agreed that some structure was necessary to ensure that students in cooperative groups were explaining content to each other, not just sitting together or doing activities with a single product. Yet in the world of practice, cooperative learning often bore little resemblance to the well-structured methods studied in the research. Studies of actual applications of cooperative learning found that most teachers were not using specific, named methods that had been researched, and were not applying the principles derived from that research (Antil, Jenkins, Wayne, & Vadasy, 1998; Emmer & Gerwels, 2002; McManus & Gettinger, 1996). Instead, they were having students sit in groups and help each other as needed, or they were having groups do projects in which one student might do the thinking part of the task. I recall observing a math class in which small groups of second graders were making graphs showing how many pets each child in the group had. In each group, there was lively discussion about pets (and about what constitutes a "pet"). But in every case, one child, typically either the best math student or the most assertive, actually held the pencil and drew the graphs. The others were discussing pets, not math. Later, the groups made a pretty version of their graphs and some of the students colored in the bars on the graph. Again, coloring is art, not math. In classrooms everywhere, cooperative learning became a way to keep students busy and

productive-looking in a setting in which students might gain some exposure to higher-level content by observing their more capable peers, but group members seldom help their groupmates master the academic material. Further, many teachers found it difficult to align cooperative learning processes with the books and curricula they were expected to teach, resulting either in a failure to use or to maintain cooperative learning over time or in implementation difficulties. For example, some teachers would teach outstanding cooperative learning lessons but would take so long on each of them that they could not cover the content for which they were responsible. Finally, many teachers had difficulty transferring cooperative methods from the workshop to classroom practice. Because cooperative learning workshops lend themselves so well to simulations and almost invariably use them, teachers usually leave their workshop with a strong, personal understanding of what cooperative learning is, but still have trouble once they face the very different reality of their own classroom.

For all of these reasons, cooperative learning gained the dubious distinction of being massively misapplied. Today, cooperative learning continues to be featured in virtually every educational psychology text and teaching methods text, and there are questions about it on teacher certification tests. Yet appropriate use of cooperative learning is rare, outside of comprehensive reform programs, such as Success for All, which emphasize this strategy.

The cooperative learning experience greatly influenced the development of Success for All, which built directly on earlier attempts to solve the problem of ensuring quality implementation of research-based cooperative learning strategies. Beginning in 1980, we developed a comprehensive mathematics program, Team Assisted Instruction (TAI; Slavin, Madden, & Leavey, 1984) to confront the problems of implementation quality and curriculum integration in mathematics. In 1983, we developed Cooperative Integrated Reading and

Composition (CIRC; Stevens, Slavin, Madden, & Farnish, 1987), which applied a similar solution to a comprehensive approach to reading and writing instruction in the upper elementary and middle grades. In 1985, these programs plus programs for social studies and science were integrated into a schoolwide cooperative learning strategy called the Cooperative Elementary School (Slavin, 1987a; Stevens & Slavin, 1995). In each of these cases, we found that we could obtain consistent, high-quality implementations of cooperative learning that could be sustained for many years by integrating cooperative strategies into specific curricula and providing extensive professional development, followup, and coaching. Several studies comparing CIRC (Stevens et al., 1987) and TAI (Slavin et al., 1984) to matched control classes found that these comprehensive models produced higher scores on standardized achievement assessments than traditional methods. With the Cooperative Elementary School, we learned how to incorporate school-level structures, such as on-site coaches and teacher's learning communities (Calderón, 1999), to further support quality implementation of cooperative learning.

Our experiences with TAI and CIRC in the 1980's convinced us that research-based practices could be successfully introduced in schools, could be maintained, and could produce enhanced achievement. They could adapt cooperative learning explicitly to a specific set of instructional materials, and vice versa. Because they became the predominant approach to core academic content, they were taken seriously by the school, and given professional development resources that generic, content-free cooperative learning rarely receives. Further, these methods could and did incorporate the findings of other research. For example, CIRC incorporated comprehension strategies (e.g., summarization, prediction, graphic organizers, story grammar) that are not inherently connected to cooperative learning (see Pressley & Woloshyn, 1995).

Development of Success for All

In 1986, our group at Johns Hopkins University was approached by the Baltimore City Public Schools and invited to develop a program capable of ensuring the success of all children in the city's most impoverished schools. Kalman Hettelman, a former State Secretary of Human Resources, engaged us in a series of discussions on behalf of the superintendent, Alice Pinderhughes, who was looking for major solutions to the widespread failure of inner-city youngsters. We eagerly embraced this challenge, and used it as an opportunity to put into practice both everything we had learned in our own cooperative learning research, and everything we could glean from the broader literature. We carefully reviewed research in each area we needed to address in our design. For example, we chose to use cross-grade performance grouping for reading, or Joplin Plan, based on a review of research on grouping strategies for elementary schools (Slavin, 1987b; Gutierrez & Slavin, 1992). We based classroom management strategies primarily on the work of Evertson, Emmer, & Worsham (2000). We adapted a tutoring model for primary-aged students from Reading Recovery (Pinnell, DeFord, & Lyons, 1988; Pinnell et al., 1994). We built internal coaching mechanisms based on the research of Bruce Joyce (Joyce, Hersh, & McKibbin, 1983; Joyce, Calhoun, & Hopkins, 1999) and incorporated teacher's learning communities (Calderón, 1999). We carried out an extensive review of beginning reading strategies and came to the same conclusions reached by Adams (1990) a few years later, that systematic, synthetic phonics should be the basis for early reading instruction. Drawing from a very different philosophical camp, we incorporated writing process models, in which students work in groups to plan, draft, revise, edit, and publish compositions, because of the strong research support for this strategy (Harris & Graham, 1996). Reviews of research on effective practices in preschool (Karweit, 1994a) and in kindergarten (Karweit,

1994b) informed development in these areas. We adapted parent involvement strategies from the work of Epstein (1995), and curriculum-based assessment strategies from the work of Fuchs et al. (1991). An emphasis on prevention and on mainstreaming derived from a review of research on mainstreaming and special education (Madden & Slavin, 1983). In each case, we focused on research that compared replicable strategies to matched or randomized control groups over periods of at least a school year, and selected strategies that had repeatedly been found to be more effective than traditional methods.

The theory of action behind the design of Success for All was an assertion that research-based strategies could be incorporated into teachers' daily practices on a broad scale if and only if we provided well-developed student materials, teacher's manuals, assessments, training, followup, and implementation assessments, as we had done in our TAI and CIRC experiments. Our cooperative learning experiences led us to believe that if we taught general principles of good practice and then asked teachers to work out how to apply them to their own materials and instruction, it would be difficult to obtain consistent high-quality implementations in the first place and even more difficult to maintain quality implementations over time.

Another key part of our implementation strategy was derived from our own experience, not from any formal research. This was a requirement for a schoolwide vote, by secret ballot, of at least 80% of the staff in favor of program adoption. Our reasoning was twofold. First, with the extensive changes we were asking schools to undergo, we wanted to be sure that the teachers themselves understood and supported the program. Second, we knew that in the high-poverty schools in which we expected to work, we had a limited window of time to begin to show tangible benefits of our programs. We believed that we had to have a relatively rapid rollout of the main program elements so that teachers could see marked improvements in students' reading

and behavior within a few months. Without a strong statement of teacher buy-in (or at least a temporary suspension of disbelief), we felt it was unlikely that such a rapid rollout could be accomplished.

The requirement of an 80% favorable vote has generally served us well. Most schools that take the vote get a positive outcome. In cases where this is not true, the problem usually seems to be a lack of faith in the principal or a split among the staff, conditions we'd want to avoid in any case.

The principal elements of the program we designed, and still implement today, are summarized in Table 1. While our materials, training procedures, and other elements have been substantially revised over time, the basic structural elements presented below (e.g., instructional methods, grouping, staffing, and school organization) have remained constant over sixteen years.

Research on Success for All

Early Research

The early research on Success for All used a consistent paradigm. In each case, children were pretested (usually on the Peabody Picture Vocabulary Test) on entry to kindergarten or first grade, and then followed over time with individually administered reading tests given to all children each spring. These were typically scales from the Woodcock Reading Mastery Test and the Durrell Oral Reading Test.

From the first studies, it was clear that Success for All was making a substantial difference. Longitudinal studies of the first five schools in Baltimore found that these schools gained substantially more than matched controls, with effect sizes averaging around 50% of a standard deviation for students in general and more than a full standard deviation (ES=+1.00) for students who began in the lowest 25% of their grades (Slavin, Madden, Karweit, Livermon &

Table 1

Major Elements of Success for All

Success for All is a schoolwide program for students in grades pre-K to six which organizes resources to attempt to ensure that virtually every student will reach the third grade on time with adequate basic skills and build on this basis throughout the elementary grades, that no student will be allowed to "fall between the cracks." The main elements of the program are as follows:

***A Schoolwide Curriculum*.** During reading periods, students are regrouped across age lines so that each reading class contains students all at one reading level. Use of tutors as reading teachers during reading time reduces the size of most reading classes to about 20. The reading program in grades K-1 emphasizes language and comprehension skills, phonics, sound blending, and use of shared stories that students read to one another in pairs. The shared stories combine teacher-read material with phonetically regular student material to teach decoding and comprehension in the context of meaningful, engaging stories.

In grades 2-6, students use novels or basals but not workbooks. This program emphasizes cooperative learning and partner reading activities, comprehension strategies such as summarization and clarification built around, narrative and expository texts, writing, and direct instruction in reading comprehension skills. At all levels, students are required to read books of their own choice for twenty minutes at home each evening. Cooperative learning programs in writing/language arts are used in grades 1-6.

***Tutors*.** In grades 1-3, specially trained certified teachers and paraprofessionals work one-to-one with any students who are failing to keep up with their classmates in reading. Tutorial instruction is closely coordinated with regular classroom instruction. It takes place 20 minutes daily during times other than reading periods.

***Preschool and Kindergarten*.** The comprehensive, theme-based, preschool and kindergarten programs in Success for All cover all domains of learning, with a particular focus on language and literacy.

***Quarterly Assessments*.** Students in grades 1-6 are assessed every quarter to determine whether they are making adequate progress in reading. This information is used to suggest alternate teaching strategies in the regular classroom, changes in reading group placement, provision of tutoring services, or other means of meeting students' needs.

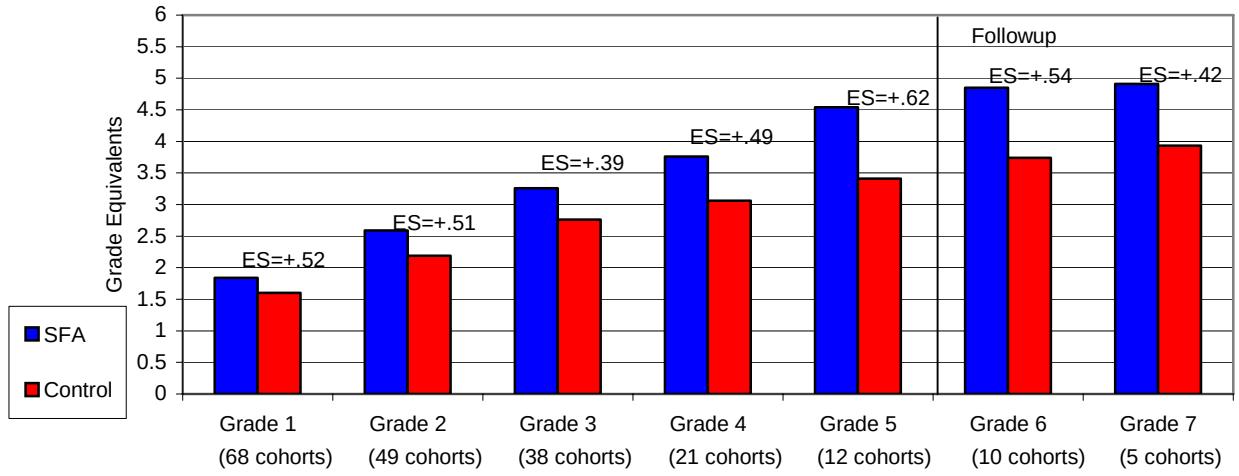
***Solutions Team*.** A Solutions Team works in each school to help support families in ensuring the success of their children, focusing on parent education, parent involvement, attendance, and student behavior. This team is composed of existing or additional staff such as parent liaisons, social workers, counselors, and vice principals.

***Facilitator*.** A program facilitator works with teachers to help them implement the reading program, manages the quarterly assessments, assists the Solutions Team, makes sure that all staff are communicating with each other, and helps the staff as a whole make certain that every child is making adequate progress.

Dolan, 1990; Madden, Slavin, Karweit, Dolan, & Wasik, 1993; Slavin, Madden, Dolan, Karweit, & Wasik, 1992; Slavin, Madden, Dolan, & Wasik, 1996). This paradigm was ultimately followed in schools in 11 districts around the U.S., and the results continued to strongly support the program's impact (see Dianda & Flaherty, 1995; Livingston & Flaherty, 1997; Nunnery et al., 1997). Figure 1 summarizes the impact from studies of various durations, from one to six years. The figure shows that by the end of fifth grade, students in Success for All schools were performing about a full grade equivalent higher than matched control schools on individually administered tests. In addition to effects on achievement, studies found substantial impacts on assignments to special education (Slavin, 1996) and other outcomes (Slavin & Madden, 1996, 2001).

The rapid growth of Success for All through the 1990's exposed SFA to unusual attacks from political opponents, particularly Pogrow (2000), who had his own pullout program for Title I that he felt to have been slighted by the advent of comprehensive school reform. A series of articles and rebuttals in the *Phi Delta Kappan* and elsewhere (see Slavin & Madden, 2000) pointed out that the effects of Success for All were not miraculous and that the program did not maintain everywhere, but did not call into question the repeated observation that Success for All students usually perform significantly better than other children on reading measures.

Figure 1
Comparison of Success for All and Control Schools in Mean Reading Grade Equivalents and Effect Sizes 1988-1999



Note: Effect size (ES) is the proportion of a standard deviation by which Success for All students exceeded controls. Includes approximately 6000 children in Success for All or control schools since first grade.

Later Research on Success for All

After the many studies establishing the basic effects of Success for All, research attention has shifted in different directions. One line of research has focused on effects for English language learners, evaluating both a Spanish bilingual adaptation and an English language development adaptation (see Slavin & Madden, 1999; Slavin & Cheung, 2004). Both adaptations have been found to be effective. Research correlating quality and completeness of implementation with student outcomes has been a focus (Nunnery et al, 1997; Ross et al., 1995). A longitudinal followup of students who had been in the original Baltimore schools found that by eighth grade, these students were still performing significantly better on standardized reading measures than former control students, and were substantially less likely to have been retained in grade or assigned to special education (Borman & Hewes, 2003).

Because of demands from policy audiences, some attention has shifted to studies that take data from routine state assessments. Formal studies in Texas (Hurley, Chamberlain, Slavin, &

Madden, 1999), and California (Slavin, Madden, & Cheung, 2002), have found substantially higher gains for Success for All students than for the state as a whole. Similar analyses have found the same patterns in nearly every state with more than 10 Success for All schools. Such comparisons are far less scientific than the longitudinal experiments, but they respond to a desire from policymakers and educators to know how the program performs on the assessments for which they are held accountable.

As research on comprehensive reform programs and on reading programs has taken on greater political and practical importance, a number of reviews of the research have appeared. The American Institutes of Research (Herman, 1999) rated comprehensive reform models and found Success for All to be one of two elementary programs with the strongest evidence of effectiveness. This conclusion was echoed in a report for the Thomas Fordham Foundation by Traub (1999). A meta-analysis by Borman, Hewes, Overman, & Brown (2003) identified 41 experimental-control comparisons done to evaluate Success for All, of which 25 were done by third parties. This was the largest number of such studies for any comprehensive reform model, and Borman et al. listed SFA as one of three programs with strongest evidence of effectiveness. Finally, Pearson & Stahl (2002) evaluated reading programs and gave Success for All the highest rating for evidence of effectiveness among all core reading programs.

Randomized Evaluation of Success for All

Despite the many rigorous experimental-control comparisons evaluating Success for All, these have all been matched experiments, which leaves open the possibility that selection bias or other unmeasured differences might account for some of the effects. To investigate this possibility, a randomized evaluation is currently under way, in which 41 schools were randomly

assigned to use Success for All either in grades K-2 or in grades 3-5. Data are being collected and analyzed by NORC at the University of Chicago, an independent evaluator. First-year results found positive program effects on the Woodcock Word Attack scale for the K-1 students, but not on other measures (Borman, Slavin, Cheung, Chamberlain, Madden, & Chambers, in press).

Enhancements to Success for All

Much additional research and development is under way to enhance the impacts and replicability of the Success for All literacy programs. This includes development and evaluation of video/DVD programs designed to model reading processes for teachers as well as students. Part of the idea of these video/DVD programs is to enable teachers to maintain program fidelity while moving away from excessive reliance on their teacher's manuals. A computer-assisted tutoring program is also in development. These are being evaluated in rigorous experiments. A randomized experiment involving ten schools found significantly positive effects of the new video/DVD elements for first graders (Chambers et al., 2004). In addition, development and evaluation of a middle school program (Daniels, Madden, & Slavin, in press), of new preschool and kindergarten programs, and of new approaches to English language development and to transition from Spanish to English (Calderón et al., 2004) reading are under way.

Challenges for the Future

In its sixteenth year, Success for All is undergoing major changes to respond both to opportunities and to difficulties presented by the current education policy environment. Among the opportunities is an extraordinary shift in the newly reauthorized Institute for Education

Sciences (IES) to support large scale, randomized evaluations of practical, replicable interventions. This shift is opening new opportunities for high-quality research on Success for All in new contexts, as well as research on new components and practices. The focus of No Child Left Behind on "scientifically based research" as a basis for practice has not yet been consequential in programs such as Reading First and Comprehensive School Reform, but this could change in the future, particularly as the newly funded What Works Clearinghouse begins a set of definitive, scientifically-valid reviews of research on programs in many areas. These developments are helping Success for All return to its roots, as a vehicle for incorporation of new research knowledge into a replicable strategy and as a program that carries out (or encourages third parties to carry out) high-quality research on programs with potential to improve outcomes for high-poverty students and schools.

One major challenge (and opportunity) facing Success for All is a dramatic shift nationally away from site-based management toward district coherence and consistency. Increasingly, districts are adopting a single program for all schools at a given level. This is problematic for Success for All, which has always emphasized an informed school-by-school decision process. However, we are experimenting with districtwide applications of Success for All, and are finding very good results (see Slavin, 2003). In Hartford (CT), Lawrence (MA), Long Branch (NJ), Assumption Parish (LA), and other districts, whole-district implementations have helped districts make particularly impressive gains, as district policies, staffing, and practices become aligned with the requirements and potential of Success for All. At the same time, SFA can operate more effectively in clusters of schools with consistent and enlightened leadership. Subdistricts, such as New York's Chancellor's District (Phenix et al., 2004) and feeder systems in several cities that are part of a program called Project GRAD, have also been

very effective, using similar strategies. A major focus in coming years will be on developing programs and supports to enhance our capacity to work with whole districts or subdistricts.

Success for All has demonstrated that well-structured whole-school change is possible, sustainable, and effective. It provides one model for direct translation of research findings into widescale implementation. However, there is more development, research, and evaluation to be done on many aspects of the model, and it will surely change in response both to new research findings and to the external environment for reform.

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