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# Comprehensive School Reform and Student Achievement

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## The Question

Is comprehensive school reform an effective strategy for school improvement, and if so, what models are most effective?

## The Context

Comprehensive school reform refers to the use of schoolwide reform strategies focused on academic achievement and based on research-supported models. In 1993, RAND, an independent research and analysis organization, released a publication calling for greater federal involvement in whole-school reform. The following year, under the reauthorization of the Elementary and Secondary Education Act (ESEA), schools with 50 percent of their student body identified as high-need were allowed to use ESEA funds for whole-school, rather than programmatic, reform (the previous threshold had been 75 percent). In 1997, Congress created the Comprehensive School Reform Demonstration program (CSRD), and when ESEA was reauthorized as the No Child Left Behind Act (NCLB) in 2001, CSRD became a full-fledged federal program (Title I, Part F). In 2002, as a direct result of NCLB and CSRD, \$305 million was appropriated for comprehensive school reform projects.

Eleven general principles guide comprehensive school reform programs. These programs

- Employ proven methods and strategies based on scientifically based research.
- Integrate a comprehensive design with aligned components.
- Provide ongoing, high-quality professional development for teachers and staff.
- Include measurable goals and benchmarks for student achievement.
- Are supported within the school by teachers, administrators, and staff.
- Provide support for teachers, administrators, and staff.
- Provide for meaningful parent and community involvement in planning, implementing, and evaluating school improvement activities.
- Use high-quality external technical support and assistance from an external partner with

experience and expertise in schoolwide reform and improvement.

- Plan for the assessment of strategies for school reform implementation and for annual evaluation of student results achieved.
- Identify resources to support and sustain the school's comprehensive reform effort.
- Have been found to significantly improve the academic achievement of students or demonstrates strong evidence that it will improve the academic achievement of students.

Although individual schools can generate comprehensive school reform programs, there are at least 33 models that have been replicated across the nation. These models are supported by a broad spectrum of groups, including university-based centers; federally supported education labs; private, not-for-profit organizations; and private, for-profit groups.

## The Details

Geoffrey Borman, Gina Hewes, Laura Overman, and Shelly Brown conducted the study—*Comprehensive School Reform and Achievement: A Meta-Analysis*—highlighted in this issue of *ResearchBrief* (see for full citation). In the study, the researchers reviewed more than 800 documents examining comprehensive school reform efforts, ultimately selecting 232 studies representing 29 models for meta-analysis.<sup>1</sup> To be included in the analysis, the studies had to meet all of the following five criteria:

- There was sufficient achievement data to allow effect size computations.
- A comparison group was present.
- The data was not duplicated by another study already included.
- The samples were composed of students from U.S. schools.
- The students in the samples were from the school's regular education program.

The average effect size<sup>2</sup> across all observations ranged from 2.74 to 3.79 Normal Curve Equivalents (NCEs), using a 95 percent confidence interval. In an effort to further hone the effect size estimate, the authors used a modified weighted multiple regression, which generated four interesting details:

- Comparisons using control groups resulted in lower effect sizes than those using pre- or post-test analyses.
- Effect sizes from studies conducted by the program developers were greater than those produced by third party evaluators.
- Evaluation of longitudinal data resulted in larger effect sizes than evaluations looking at multiple cohorts.
- Models that included parents in school governance had smaller effect sizes than those that did not involve parents in this manner.

Ultimately, the authors determined that the overall effect of comprehensive school reform on student achievement was .12 for studies including a control group. Although effect sizes

below .20 are generally considered extremely small, the authors argue that in the social sciences effects of .10 to .20 are not trivial. In the case of this study, an effect size of .12 means that the average school with a comprehensive school reform program outperformed 55 percent of similar schools without such programs. The specific comprehensive school reform programs showing the greatest overall effect sizes were Direct Instruction (.21), The School Development Program (.15), and Success for All (.18).

Despite the overall effectiveness of comprehensive school reform programs, the authors were unable to explain this increased effectiveness by looking at the general requirements for these programs (such as intensive professional development; measurable goals and benchmarks for students; the use of specific curricula; program cost; or external support from the program developer). The authors hypothesize that the failure to identify such relationships stems from an inability to determine which aspects of the programs were implemented successfully and which were not. The authors also highlight the success of implementation efforts as one possible explanation for the larger effect sizes for developer-conducted evaluations, hypothesizing that developers would be more likely to analyze fully implemented programs rather than only partial implementations. Successful implementation may also explain the stronger effects found in longitudinal analyses. The authors hypothesize that the significantly increased effectiveness found after the fifth year of a program may be due to continued implementation or a self-selection bias as schools not experiencing success with the reform drop out (or, likely, both). Two other variables, poverty and the subject-matter orientation of the assessments used, did not explain effect differences. In other words, comprehensive school reform programs were equally effective regardless of school poverty levels or subject areas assessed.

## **The Bottom Line**

Comprehensive school reform programs may be an effective approach to improving student achievement, depending on the model used and the level of implementation. [Direct Instruction](#), [The School Development Program](#), and [Success for All](#) are models that have shown the greatest degree of effectiveness and are supported by the largest body of research.

## **Who's affected?**

Findings from this study would be of interest to schools looking into implementing whole-school reforms to improve student achievement and stakeholders focusing on school improvement efforts.

## **Caveats**

In an effort to include as many studies as possible in the analysis, the authors were forced to estimate some of the variables. For example, if a study reported results for 2nd graders at a school, but did not include the actual number of students, the authors estimated the number by looking at the average size of 2nd grade cohorts nationally (in this case, 75). Additionally, because this research examined the reported results from other studies (and did so in terms of academic achievement), it did not directly examine any specific program or school. As a result,

the degree to which comprehensive school reform programs were actually implemented, or the specific impact they may have had on students, schools, and communities—outside of test scores—is lost. It is also important to note that a fair degree of debate exists regarding the effectiveness of some of the specific models and that contrasting studies have found positive or negative results, depending on the authors. Finally, although the authors of this study argue for the significance of the reported effect size (.12), the effect is still quite small. This may be the result of a number of issues, including the degree to which programs are successfully implemented. Either way, further research into the effects of implementation efforts, as well as the program, would be useful.

## The Study

Borman, G. D., Hewes, G. M., Overman, L. T., & Brown, S. (2003). Comprehensive school reform and achievement: A meta-analysis. *Review of Educational Research* 73(2), 125-230. The study is also available [online](#).

## Other Resources

Barro, S. (1993). Federal policy options for improving the education of low-income students. Volume III, Countering inequity in school finance [Abstract]. Santa Monica, CA: RAND [MR-211-LE](#).

[National Clearinghouse for Comprehensive School Reform](#)

### Selected Comprehensive School Reform Models

- [Direct Instruction](#)
- [The School Development Program](#)
- [Success for All](#)
- [Modern Red Schoolhouse](#)
- [Expeditionary Learning Outward Bound](#)
- [Roots and Wings \(Success for All\)](#)

### ASCD Resources

- [Understanding by Design](#)
- [What Works in Schools](#)

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## Endnotes

<sup>1</sup> Meta-analysis is a collection of systematic techniques for resolving apparent contradictions in research findings. Meta-analysts translate results from different studies to a common metric and statistically explore relations between study characteristics and findings (from Meta-Analysis in

Educational Research, [ERIC Digest](#)).

<sup>2</sup> Effect size is a measure designed to quantify the effectiveness of a specific intervention as compared to another intervention. Effect sizes between .2 and .5 are generally considered small, between .5 and .8 are considered medium, and .8 or greater are considered large, although the authors here argue that is still an important effect.

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