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National Evaluation of Smaller Learning Communities

Literature Review

Executive Summary

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Executive Summary

The purpose of the literature review is to provide a comprehensive overview of the research on the effectiveness of various practices used in creating smaller learning communities (SLCs). This review will provide a conceptual basis for the National Evaluation of the Smaller Learning Communities program, which Abt Associates Inc. is conducting for the U.S. Department of Education.

Background

The movement to develop SLCs has emerged from a body of advocacy research and practice that seems to indicate, by a number of measures, the superiority of smaller **schools**. At least since the 1950s, there has been a debate about school size with both larger and smaller school proponents (Conant, 1959, Barker and Gump, 1964, respectively) advancing social and economic arguments to support their views. For example, larger schools have been hypothesized to provide more opportunities for advanced courses and to be more cost-efficient, whereas smaller schools have been expected to offer greater individualized learning for each student.

During the past 40 years, the average size of high schools has increased dramatically, whereas the arguments in favor of smaller school settings have grown more numerous. Practitioners have not waited for solid empirical research evidence to address the perceived problems of large schools (Dynarski *et al.*, 1998; McMullan and Wolf, 1991). In 1996, the National Association of Secondary School Principals (NASSP) clearly endorsed the SLC approach by publishing *Breaking Ranks: Changing an American Institution*, a manifesto calling for a greater level of personalization in education. In the absence of the resources necessary to build new, smaller schools, a variety of approaches have been developed to make large schools **seem** smaller.

Review Process, Challenges to the Review Process, and Organization of the Review

Web searches of databases such as ERIC, library searches, reviews of current periodicals, as well as research and evaluation web sites, were all utilized in this search. Publications with a focus on secondary schools were included and, when appropriate, so too were a few select publications addressing elementary and middle schools. We used scholarly publications to the extent possible, but when those proved to be scarce, other sources such as evaluation reports were also included. Of 110 documents identified, 55 were reviewed in depth for this report. They comprised three cost analyses, 25 qualitative case studies, and 27 outcome-based studies (two with experimental designs and three with quasi-experimental designs). Because the smaller schools literature provides the conceptual basis for the SLC movement, studies focusing on smaller schools are reviewed first, followed by studies focusing on SLCs.

In summary, of the 55 documents reviewed in depth for this report, a little less than half (27) reported data on student outcomes. Of these sources, 19 reported on outcomes in SLCs, restructured high schools, or schools with “restructuring practices.” We report effect sizes for nine studies (see Appendix D); the remainder, unfortunately, did not contain sufficient data to calculate effect sizes.

As an evaluative tool, effect sizes provide a framework to compare quantitative results and, when common measures are used, to examine the magnitude of treatment effects within and across studies. Effect sizes can help to make sense of the many results that are independently reported as both statistically significant and statistically non-significant to understand the educational significance of outcomes. For example, a study's small sample size may not yield enough statistical power to show statistically significant outcomes despite a relatively strong effect for the treatment group. A report of **statistical** significance does not necessarily denote how **educationally** significant an effect may be, but by calculating effect sizes, it is possible to make comparisons among commensurable effects. In social science research, an effect size of .2 is described as "small," .5 is considered "moderate," and .8 denotes a "large" effect (Cohen, 1988).

This review, however, faces several challenges. For one, many of the articles in this review are based on relatively weak research designs. For example, school size studies are generally correlational, based on large national databases such as High School and Beyond (HS&B). Secondly, SLC is not a single identifiable program; instead, it represents a variety of possible approaches, singly or in combinations. This complexity makes it difficult for researchers to know which changes to attribute to which interventions. In addition, studies using large national databases, although often methodologically sophisticated, cannot assess the possible impact of bias as students and teachers self-select into a chosen program.

Four key research questions provide the structure for the review:

1. School size: How does size matter, and for whom?
2. Restructuring and reorganization: What practices constitute SLC restructuring reform?
3. SLC strategies: What are the key features of each? What, if any, outcomes have been attributed to each one?
4. Challenges in Implementing SLC Reforms: What factors have been identified as hindering implementation of SLC reforms?

School Size: How Does Size Matter, and For Whom?

Although Lee, Ready and Johnson (in press) note that reforms have moved ahead of research, there is a fair body of research on school size *per se*, the preponderance of which supports the hypothesis that smaller schools are more effective than larger schools. The findings are summarized as follows:

- **Academic achievement and educational equity.** Although academic achievement is correlated overall with socioeconomic status (SES), smaller schools benefit low SES students, and larger schools have a negative impact on these students. The only benefits of larger schools were for high-SES schools, and the effect was minimal.
- **Extracurricular activities and participation.** The difference was reflected in outcomes such as higher proportions of students participating and more meaningful participation (in small schools).
- **Attendance and dropout rates.** Generally, smaller schools had lower dropout and higher attendance and graduation rates. There is some suggestion that the differences are mediated by the less-favorable school climate in large schools.

- **Student attitudes, behavior, and sense of belonging.** Although Lee, Ready and Johnson (in press) found that a school can be “too small,” most of the evidence suggests that students are more satisfied and that there are fewer negative behaviors such as vandalism in smaller schools.
- **Cost-effectiveness.** When small and large schools are compared on a cost per graduate basis (rather than cost per student), and controlling for poverty, small schools are just as cost-effective as large schools.
- **Teacher attitudes.** Teachers report more satisfaction, feel more responsibility for student learning, and report a variety of other more positive outcomes.

It should be noted that the small schools research findings are merely suggestive of possible outcomes of SLC restructuring because small schools may possess student- or school-level characteristics other than school size alone that result in their effectiveness.

Restructuring and Reorganization of Schools into Smaller Learning Communities

Although definitions of large and small high schools vary from study to study, existing research suggests that small schools are more effective than large schools on a variety of outcomes. As a result, education reformers strongly support creating smaller schools. Still, as Raywid (1996) points out, although research does support the benefits of smaller schools, there are also a considerable number of large schools that are already functioning. Consequently, schools turn toward the creation of within-school subunits. By breaking large schools into smaller subunits, practitioners hope to reduce the **experienced** size of school, despite the actual building size. The body of research on restructuring schools has yielded the following group of general findings:

- Small schools and larger schools that have restructured **may** produce similar student outcomes;
- Positive outcomes include increased academic achievement, increased academic equity, increased student engagement, more positive teacher-student relations and a decreased dropout rate; but
- The majority of studies are based on retrospective correlational data, and thus **causal inferences cannot be drawn.**

Smaller Learning Communities

The SLC movement has only emerged in the last 15 years, and research on it is far more limited than the literature on small schools. Much of the literature consists of case studies and evaluations of individual schools. Very few studies focus on large numbers of schools, and very few focus on a whole-school model in which all students are included in some form of SLC, rather than the more limited model in which only a subset of students participate in a SLC. The SLC-related studies are grouped according to the type of SLC strategy employed. Certain strategies, such as freshman transition programs and academic teaming, are typically used in combination with other strategies, which means that no published research is available addressing these strategies in isolation. Findings by type of SLC strategy are as follows:

- **Academies:** Academies organize curricula around one or more careers or occupations. The most rigorous research has been conducted on this strategy. Studies found moderate positive outcomes, with strongest effects among high-risk students. Effect sizes for attendance and graduation rates ranged from 0 to .5. High-risk career academy students were more likely to complete a basic core curriculum (effect size (ES) ranged from .37 to .41) and were more likely to exhibit college preparatory behavior (ES = .23). In addition, career academy graduates exhibit better work attendance (ES ranged from .03 to .16) and work performance (ES ranged from .14 to .17) than comparable graduates.
- **Houses:** House plans assign students within the high school to groups of a few hundred each across grades; each house has its own discipline policies, student activity program, student government, and social activities. Individual houses, however, are less autonomous than SWS programs. We found only one study that examined house plans alone.
- **Schools-within-a-school (SWAS/SWS):** These are multi-grade, separate, autonomous individual subunits organized around a theme, each with its own personnel, budget and program. Studies have found modest improvement in academic (ES = .46), behavioral (ES = .33), attitudinal, and process (ES = .26) outcomes for SWS students.
- **Magnet schools:** These have a core focus (e.g., math and science, or arts), are typically selective, and usually draw students from the entire district. Consequently, study findings of improvement in outcomes are potentially confounded by selection bias. Much of the research on magnet schools has focused on their effectiveness as a desegregation tool, but some of it has focused on outcomes of interest for SLCs. **Some** studies did find indications of greater student achievement and greater educational equity in magnet schools.
- **Alternative scheduling:** This is a strategy for changing the way time is used in school by lengthening class periods and altering daily and/or annual schedules. Studies reviewed yielded insufficient evidence to support generalizations about effects on students. For example, a study of North Carolina's implementation of block scheduling yielded very modest effect sizes on student test scores, ranging from .03 to .16.

Challenges in Implementing SLC Reforms

The SLC model calls for substantial changes in how schools do their work. Challenges to accomplishing these changes arise from both districts and schools. District reluctance to change can undermine schools' efforts. In schools, problems can arise from conflicting needs with respect to bell schedules or cafeteria space. Wasley *et al.* (2000) cite several other issues: enrollment, principal support and turnover, and staff conflict and turnover. If principals are reluctant to share power, there is likely to be conflict with teachers and sub-unit heads (Pribesh, Lee and Osuna-Currea, 2001). Another challenging issue is the possibility of inadvertently creating hierarchies and effectively resegregating students as, over time, students choose some units over others, based on academic demand or existing membership (Ready, Lee and LoGerfo, 2001). It has also been noted that implementation of SLCs may require increases in budget, planning time, or staff in order to be successful (Legters, 1999).

Conclusions and Implications

The research literature generally supports the efficacy of small schools, but such findings cannot be safely generalized to SLCs within larger schools. At the same time, schools that have restructured in ways typical of SLC organization have also shown positive results in several different areas. The research evidence in support of specific SLC strategies is in general sparse; the findings so far point to modest positive gains associated with implementing SLCs. **From the group of studies for which we were able to compute effect sizes, we see that the bulk of effect sizes fall between 0 and roughly .50, indicating a small to moderate effect of SLC implementation on a variety of student outcomes.**

Another major conclusion that may be drawn is that any study of SLC implementation must pay attention to the substantial possible sources of resistance that derive from both districts and schools. The need for additional resources to carry out SLC implementation has also been noted.

The shortage of robust, empirical work highlights the need for further research in this area. More rigorous studies that include sufficiently large numbers of schools and sufficient variation in the use of SLC strategies are especially needed. Longitudinal studies have also been rare. The issue of selection bias is a weakness of much of the current research, because it is still rare for students to be assigned randomly to one or another SLC strategy. An additional research need is a more intentional focus on such proximal outcomes as teacher and student attitudes, coupled with an effort to tie those outcomes to the longer-term student outcomes of interest.

The key issue? and one that is difficult to address? is how the outcomes for students who participate in an SLC differ from those that **would have occurred if those students had not participated in the SLC**. The National Evaluation of Smaller Learning Communities will attempt to address these issues through a systematic, large-scale study comprised of both implementation and impact measures. In particular, the impact study will use a variety of statistical comparative techniques to measure the difference in outcomes between SLC and non-SLC students.