Class Size Reduction in Practice: Investigating the Influence of the Elementary School Principal

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Abstract

This article reports on findings from an implementation study of class size reduction policy in Wisconsin entitled the Student Achievement Guarantee in Education (SAGE). SAGE's theory of action is multi-faceted, incorporating a focus on smaller class sizes, on-going professional development, home-school partnerships and a school-wide instructional focus. Drawing on extensive data from an implementation study of SAGE, we identify principals as critical and overlooked influences in the implementation of class size reduction policies. Within a sample of nine schools involved in advanced states of policy implementation, principals' influence proved central in three areas: the use of space, serving the needs of diverse learners and building teacher capacity. We hypothesize that how principals interpret these challenges are centrally important in explaining student outcomes linked to class size reduction. Findings underscore the importance of policy strategies rooted in understanding of the challenges of school leadership for instructional change.

Introduction

Class size reduction is a very popular and very costly reform initiative. The literature on the effects of class size reduction on student achievement is voluminous and consistently points to linkage between smaller class sizes and instructional achievement (Graue et al., 2005). However, in light of the growing popularity of class size reduction initiatives, the literature also reflects glaring omissions. Decades of policy research have demonstrated the importance of context in whether and how policy mandates reach classrooms and students (Honig, 2005). However, the literature on class size reduction pays virtually no attention to how contextual factors inside of schools shape and contribute to positive student outcomes (Graue et al., 2005). Decades of research on school change have identified the influential role of school principals in establishing supportive conditions for instructional improvement (Murphy and Louis, 2000; Leithwood and Montgomery, 1982). Ironically, while attempting to isolate factors such as teachers' years of experience in explaining student outcomes, the literature on class size reduction largely overlooks the role and influence of the school principal in school-level implementation.

To help address these omissions, we investigate how the views and actions of school principals help explain school-level differences in the implementation and outcomes of class size reduction (CSR). Those who study broad scale efforts to improve instruction recently have begun to attend to how sense-making processes shape policy outcomes. From this perspective, the problem of broad scale instructional change is integrally linked to how people inside of schools understand and interpret the task of instructional change rather than solely being a function of policy designers' abilities to create the right incentives and or provide adequate financial resources (Burch and Spillane, 2003, Coburn, 2002; Spillane, 2004). Drawing on these theories, we examine the challenges of school-level implementation of class size reduction, the strategies that principals

employ to address these challenges and the views underlying their decisions and actions. Based on comparative data from high, low and rapidly achieving schools, we argue that the success of class size reduction policy turns in important ways on principals' beliefs and actions in three core areas: the use of space, serving students with disabilities and English language learners, and building teachers' capacity.

The structure of the paper is as follows. We begin by discussing the policy setting for our research. We discuss the theoretical framework we used to guide our analysis and our research method. We then consider patterns in principals' perspectives on class size reduction and how these practices are further reflected in principals' decisions and action and teachers' experiences and views. We conclude by considering the implications of our analysis for building capacity for class size reduction policy and identify areas for future research.

Background on the Project

The setting for the study is the Student Achievement Guarantee in Education program or SAGE. The SAGE program was started in the 1996-97 school with the purpose "to improve student achievement" (Wisconsin Department of Public Instruction, 2005a, webpage) initially targeting students in public schools whose communities struggle with the effects of poverty. While SAGE is widely regarded as a class-size initiative, its design contains four school program requirements for participating schools: "(1) reduce class size to 15:1 in grades K-3, (2) keep the school building open beyond regular school hours for use by students or the community, (3) implement a rigorous, high expectation curriculum, and (4) give attention to professional development and staff evaluation process" (Department of Public Instruction, 2005b).

Schools/districts contract with the Wisconsin Department of Public Instruction to participate in the SAGE program. This contract lasts for five years with the possibility of renewal. SAGE began

with 30 schools and 3,267 children across the state of Wisconsin and has grown to 524 schools and about 98,000 children in 2004-05. Approximately 47% of the students served by SAGE come from low-income families. State funding for SAGE was 4.5 million dollars in 1996-97. This funding was expanded by the Wisconsin legislature for the 1998-99 school year and again for the 2000-2001 school year and has grown to 95 million dollars presently (Wisconsin Department of Public Instruction, 2005a). While initially there was a poverty threshold of 50% to participate in SAGE, that threshold was eliminated in 1999, allowing any school to apply and participate. Participating schools receive $2000 per low income pupil in the grades covered by the program. That money can be used for anything related to the program requirements (Wisconsin Department of Public Instruction, 2005b).

Theoretical Framework

The framework we employ integrates concepts across three domains of research, including empirical studies on the effects of class size reduction initiatives on student achievement (John Zahorik, Halbach, Ehrle, & Molnar, 2003), the importance of the principal to instructional change (Fullan, 1993; Leithwood and Montgomery, 1982; Theoharis, 2004), and the role of sense-making in policy implementation (Burch and Spillane, 2003; Coburn 2002). We use this framework to examine the relationship between principals' views of SAGE and the enactment of these beliefs in their leadership practices. We also draw on the framework to examine the possible interface between these practices and schools' record of student achievement under SAGE.

Impact Studies on Class Size Reduction Initiatives: Findings and Limitations of Literature

There is a considerable body of research examining the relationship between class size reduction initiatives and academic achievement (Graue and others, 2005). Early meta analyses of class size and student achievement pointed to a convergence of research linking reduced class size to

positive student outcomes (Molnar and others, 1979). Subsequent research has provided additional evidence of positive student outcomes particularly for African American students living in poverty and younger students (c.f., Nye, Hedges and Konstantopoulos, 2001).

In spite of its volume, the research on class size reduction initiatives contains a critical omission in that it largely ignores the role of context in explaining positive student outcomes (Graue and others, 2005). There is virtually no attention to the ways in which the interior dynamics of schools and classrooms contribute to the instructional benefits of smaller class sizes. The literature also pays little attention to the role and influence of the larger organizational and social cultural contexts in which smaller class sizes are embedded, including community contexts and the policies and practices of district and regional offices.

Importance of Principal to Instructional Change

Our investigation of the role of school context in CSR implementation is anchored in considerable research on effective leadership practices for school improvement. At their core, class size reduction initiatives are instructional policies that target changes inside of classrooms and focus on the interactions between students and teachers. Principals play essential roles in creating the organizational and policy conditions that influence how teachers teach and the extent to which they feel supported in adopting new practices (Leithwood and Montgomery, 1982). The principal is instrumental in setting the course for the school and creating a coherent, sustained and school-wide focus on teaching and learning (Hart and Bredeson, 1996; Fullan, 1993; Murphy, 1994). The ways in which principals and other school administrators build service delivery models, assign staff and budget both time and money can have a significant influence on the extent to which teachers feel supported in expanding their practices and collaborating with colleagues (Darling Hammond, 1992; Leithwood, 1994; Burch and Spillane, 2003). This literature suggests the importance of teacher

learning opportunities, the use of physical and human resources, and the design of instructional systems in improving instruction for underserved populations. These three domains directly informed the lens we used to examine the role and nature of school leadership in the instructional outcomes of SAGE.

The Role of Sense-Making in Policy Implementation

Although much is known about the importance of school leadership in instructional change, in-depth investigation of the factors which enable that leadership remains under theorized (Spillane, Halverson, and Diamond, 2001). The importance of sense-making processes in leadership for instructional change is a vibrant line of analysis among scholars interested in the socio-cultural factors that shape how administrators take leadership for instructional change. From this perspective, improving instruction involves much more than a) allocating resources directly to schools to strengthen instruction and b) requiring the active buy in and engagement of principals and other school leaders in the reform. Whether and how these reforms reach students also depends on how individuals at the school level interpret reform objectives and act on these views in the context of their decisions and interactions.

Studies examining school-level factors in effective implementation of instructional policy have highlighted how principals' and teachers' interpretations of policy shape the ways in which external reforms, unfold inside of schools and classrooms – including which teachers participate, how students are served and how broad policy goals such as instructional excellence, equity and democratic governance are enacted (c.f., Burch and Spillane, 2003; Coburn, 2002; Spillane, 2004). Building on this work, we hypothesize that positive student outcomes associated with class size reduction initiatives derive from the meaning that school principals make of CSR. How do they view the mandates of CSR? Is CSR viewed as an isolated class size reduction strategy or is it part of a

school-wide agenda to improve teaching and learning? What patterns are evident in how principals identify the challenges of implementing class size reduction policies? Among those challenges identified, what categories of thought lie beneath the decisions and actions that principals assume in response to these challenges? Finally, what implications do these decisions and actions appear to have on HOW CSR is enacted at the school level. Rather than simply analyzing principals' statements of belief, we look for evidence of principals' orientations and sense-making in their own and others' descriptions of their leadership practice.

Method

<u>Research Sites and Sample Selection</u>

Our study is situated within a larger qualitative evaluation of class-size reduction policy and practice in Wisconsin entitled Class Size Reduction in Policy and Practice: How, When and Why SAGE works. SAGE, student achievement guarantee in education, is the acronym for the Wisconsin class-size reduction policy. The one-year qualitative study involves a holistic examination of curriculum, instruction, assessment, staffing and organization, classroom management and home school relations as they are developed within SAGE classrooms and schools. Results from the study are intended to inform school-level, district, and state policy so that the resources derived from SAGE may be more effectively used. The first full year of data collection began in 2004 and involved 9 elementary schools representing seven districts.

Table 1. School Sample

School	Achievement Category	District	Years in SAGE	2004-05 Enrollment	%ELL	% Special Ed	% Free and Reduced Lunch
Allerton-Farwell	Low	Rural	6	460	0%	21%	65%
Bethany	High	Urban	4	514	7%	9%	83%
Calloway	Rapid Improve	Urban	4	276	9%	22%	75%
Earhart	Rapid Improve	Semi-urban	4	238	33%	8%	62%
Gallows	Low	Urban	4	557	1%	38%	82%
McMahon	High	Semi-Urban	4	237	3%	24%	57%
Montford	Rapid Improve	Rural	4	385	11%	9%	61%
Wellstone Blvd.	Low	Urban	6	556	37%	16%	96%
West Canton	High	Rural	4	340	0%	21%	40%

All nine schools had been in the program for four years and met the federal Title I definition

of high poverty school in that each school had at least 40% of the student body that qualified for free

and reduced lunch. The schools were purposefully chosen to include a mix of rural, semi-urban, and

urban schools (see Table 1). Schools were also purposefully chosen to insure the sample included

three high achieving, three rapidly improving, and three low achieving schools as defined by

assessment data on the Wisconsin Knowledge and Concepts Examination and the Wisconsin Reading

Comprehension Test. Data collection included surveys of parents and teachers, semi-structured

interviews with principals and a sample of classroom teachers, classroom observations and policy

and instructional artifacts across nine elementary schools (1). A brief description of each school in

our sample follows.

Allerton Farwell is a low achieving elementary school in a predominately white rural school district (2). The school has a small but growing Latino population. The current principal has been a principal in the district for nine years and the last five at Allerton Farwell. Bethany, Wellstone, and Calloway and Gallows are all located in the same large urban district. Bethany is a high achieving elementary school. The current principal began her tenure at the school in 2004-2005. Calloway is a rapidly improving elementary school. It serves a racially diverse population and the current principal has been there for 14 years. Wellstone is a low achieving school that has participated in SAGE since 1996. The current principal has been a principal at Wellstone since the 1970's. Gallows is a low achieving elementary school in the same large urban district as Bethany and Calloway. While Gallows serves racially diverse families, the majority of the families are African-American. McMahon is a high achieving diverse elementary school in a semi-urban district. The current principal is in his third full year at McMahon. Montford is a rapidly improving school in a predominately white small rural district. Many of the families in the school live in low-income housing and have a high mobility rate. The current principal is in her third year and this is her first principalship. West Canton is a predominately white school in small district. The current principal has been there for twelve years. Earhart is a small rapidly improving elementary school in a "semi-urban" district. The racially diverse Earhart community includes a substanial south-east Asian Hmong population. Earhart has had two leadership changes in recent years.

At the time of writing, at least two principal interviews had been completed at each of the schools (3). At one school three interviews were done, one with a former principal and two with the current one. At least one interview had been completed with each teacher whose classroom researchers observed, meaning that at least three interviews had been completed per school for a total

of at least 27 teacher interviews. Additionally, at least five of the half-day observations had been completed in each classroom at the time of writing.

Data Collection

Interviews with principals were designed to elicit views of organizational strategies for staffing SAGE classrooms, provision of services to children with special needs (e.g. children with individualized education programs, English language learners), scheduling regular classroom activities and special and scheduling common planning time, by asking questions such as the following: What challenges have you had in organizing instructional resources in a SAGE context? How do you put together classrooms to deliver services to children with special needs? How do you work to foster a community in the school in the SAGE context?

The interviews with teachers were designed to elicit descriptions of their teaching philosophies, professional biographies, goals for teaching, understanding of curriculum, assessment of the resources and challenges presented by the SAGE configuration and perceived issues in collaboration using questions such as the following: How would you describe your classroom management strategies in a standard classroom and in a SAGE classroom? How do you organize your classroom for instruction in a reduced size setting?

Analysis

Data collection and data analysis (on-going) were closely connected, allowing us to examine patterns and working hypothesis as they emerged and to refine data collection as the study progressed (Miles and Huberman, 1994). We developed coding categories based on the theoretical work described previously and on initial analyses of interview data. In this article, we focus on three indices within our larger coding system. The first index focused on principals' statements of belief. Two codes (goals and challenges of SAGE implementation) were created to categorize these data.

The second index focused on principals' descriptions of their leadership practice. Two codes (resources drawn on in this work and outcomes of leadership) were used to label these data. Coding for this study was used to index the interviews conducted with each of 9 administrators and to identify common patterns in their views and practices. We used a constant comparative method to identify, test and refine assertions. In each instance, we triangulated the data, across interviews with each respondent and checked principals' self reports with interviews with teachers in the school and with classroom observations. Specifically, we analyzed teacher data for coding indexed under professional development, organization, staffing, scheduling and coordination of resources.

Results and Discussion

Three challenges emerged as centrally important in school-level implementation of class size reduction: Finding the space to accommodate smaller class sizes; serving students with learning disabilities and English Language Learners and building teacher capacity. We describe each of these challenges below and patterns in principals' practices and responses.

Finding the Space to Accommodate Smaller Class Sizes

Salience of the Issue

SAGE mandates that schools receiving funds reduce the number of students in a classroom to a ratio of 15:1 or less. This creates the demand for more teachers but also more classroom space. For example, under SAGE, a school that traditionally had two kindergarten classes with about 23 students would need to have three kindergartens classes with about 15 students in each.

Eight schools in the sample identified the use of space as a central challenge. The ninth school was designed for multi-age and multi-ability classrooms with sliding doors. However, the other eight schools were constructed in earlier eras when classrooms were designed to accommodate larger

groups of students. Teachers in these schools made frequent reference to the tension between old school facilities and the new class size reduction reforms as reflected in the comments of a Gallows teacher: "they are reducing the teacher to student ratio but they [the district and community] are not building more classrooms or bigger classrooms, so even if you had 30:2, you're still learning using a classroom that's designed for less kids. So I think space is a big problem."

The teacher is referring to some schools' decision use 30:2 team taught classes or 30:2 shared space classes rather than having smaller classrooms staffed by one teacher with primary instruction responsibility. She is commenting on the fact that even finding the space for these classroom configurations can prove to be a challenge in classrooms designed for twenty five students and one adult (the teacher) rather than two. Her comments reflect a general frustration we heard across interviews related to issues of overcrowding in schools and the lack of funds and community backing to construct additional classrooms to accommodate smaller class sizes and in several districts, rising student enrollment.

Researchers' observations of classrooms provided further support for the importance of the space issue. In a November 2004 observation, a group of 30 kindergartners at Wellstone (5 of them with behavioral needs) were stuffed inside a small room separated only by a temporary divider. In this crowded space, behavioral issues eclipsed teaching. Students raced back and forth from one group to the other; some threw blocks across the room and injured other children. Others crowded on small rugs to try and listen to a book above the clamor of the other group across the divider. This image was repeated in other schools visited, providing vivid evidence of the space demands created by CSR and their implications for students' learning environment.

Contrasting Orientations

Sticking with Tradition

Principals displayed strikingly different orientations in addressing space shortages exacerbated by CSR. Three out of nine principals seemed unwilling or unable to change how space was used in their school to better accommodate smaller classes or classes with smaller per pupil/teacher ratios. Significantly, all three schools were low achieving schools, suggesting that these behaviors were part of a larger pattern of problematic school practices. Two schools served large numbers of African American students– a population found to benefit considerably from reduced class size when the classroom space was made available.

Principals in this category stressed the importance of sticking with tradition around the use of space. If a room had always been used for a particular purpose, they believed in maintaining that tradition. For example, at Allerton-Farwell, a classroom was allowed to remain empty for year. It was locked and never used for any purpose. This was a school where 1st grade enrollment was rising dramatically. There were more 1st graders than 1st grade rooms and with the class size reduction initiative, the need for 1st grade classrooms was made even more acute. Given the demand, researchers asked the principal why the room had been allowed to remain empty. She responded simply, "it was always a second grade room" and teachers preferred to keep it as a second grade space.

In several instances, sticking with tradition meant maintaining a room long used for pull-out instruction or separate programming for that purpose. A first grade teacher at Gallows described the lay-out of her school, where the tradition of pull-out instruction appeared to trump the demand for more regular integrated classrooms: "if you walk down the corner and turn down the hallway, that used to be a teacher's room, well now Sue Brown teaches there and she does pull-out, there is another room down the hall for special education that used to be used as an office, so we are using

every inch of our space and teachers are teaching in really small areas." Every inch of space in the school is being used – but much of this space is still "reserved" for pull-out programming.

In other instances, sticking with tradition meant creating smaller class size by putting two adults in one large room with a divider. Teachers at Wellstone described this approach as the principal's remedy to space shortages, which one teacher referred to as a "bastardization" of the intent of class size reduction. Commenting on the issue a Wellstone teacher remarked, "If SAGE is going to do anything I think it would build more classrooms….it is still a lot of kids no matter how many adults. [25 kids and one carpet square] is a lot." Working within a classroom with a 30:2 configuration, another Wellstone teacher reached the point where she felt that she could no longer teach in ways consistent with her standards, remarking in a November 2004 encounter that she was either going to demand that she and her fifteen students moved to their room, or else she would go on sabbatical. The principal did not articulate a rationale for sticking two teachers in one classroom except to say that finding an adequate number of classrooms was an issue outside of his control.

Maximizing Space at the Classroom Level

In six out of nine schools, principals responded to space shortages in ways that seemed to maximize the use of school space and create more room for smaller classrooms. In these schools, principals did not hesitate to take steps to transform buildings designed for larger groups of children into settings where there were more self-contained classrooms designed for smaller groups of students. This frequently involved significant remodeling. The McMahon principal described the remodeling undertaken in his school: "we knocked out that wall, used SAGE money to build two dividers, so now we have three separate smaller rooms, but now they are their own classrooms with 15 kids, you can do it. That's worked out really well." Likewise, at Montford, with the support of a

community referendum, the school added another classroom (in addition to its existing three) so that it could place all entering kindergarteners in classroom sizes of fifteen or fewer students.

In these and other schools where researchers found evidence of space being maximized for smaller classrooms, principals felt comfortable turning non-classroom space into space for CSR. They leveled theaters to create additional classrooms. They changed former art rooms into classrooms and put art on a cart. They rearranged libraries and moved computers into hallways all in an effort to create more classroom space. In contrast to "stick with tradition" principals. these administrators spoke frequently (an in several instances passionately) about the importance of giving students of color and students in poverty access to a more individualized learning environment.– where they would be working in closer physical proximity to the teacher and engaged in activities that required interactive discussion with other students about the content and meaning of the lesson.

All six schools where principals displayed this orientation were either high achieving or rapidly improving schools. This pattern points to the importance of schools' use of space in establishing conditions for improved student achievement. In the schools where principals maximized the use of space for CSR, teachers described the presence of that space as enabling them to spend more time teaching and less time "organizing" In the case of a 2nd grade teacher at Earhart, it also enabled more responsive teaching. "if I'm working with a reading group that has four in it versus eight, it's a whole lot easier to hear four different voices in reading and figuring out where there might be a strength and where there is a weakness, than if I had bigger groups provided evidence of the importance of space usage in leadership for CSR." Other teachers also spoke of the ways in which smaller class sizes enabled them to do things they might otherwise consider impossible such as putting on plays go on fieldtrips. For other teachers, the benefits were more affective – having opportunities to get to know students and their families.

In observations of classrooms, researchers offered additional evidence that the size of the group matters in terms of students' engagement in learning (3). For example, at Montford, observers witnessed two teachers in two different classrooms leading students through the same lesson employing similar instructional activities. In the first classroom, the teacher was in a space with only twelve students. The students were arrayed around the teacher comfortably. They had easy access to the easel on which the teacher was writing and when invited by the teacher, could come up to the easel and write answers. The observer noted that within this space, students had the opportunity to talk with another about the lesson and what they were doing; there were few enough of them so that many students had a chance to speak and talk with one another in small dyads without disturbing the other dyad. The size of the group in the second classroom was much larger and contained 27 students. There were too many students to be arrayed around the teacher, as in the first classroom. Instead, students were required to economize on space by sitting in rows. The observers noted that there were many disruptions and space was very cramped, making it very difficult for students to both see the easel and talk to one another in small groups. Across schools, researchers observed similar dynamics suggesting the importance of class size in fostering conditions that supported student engagement in learning and in enabling more responsive teaching.

Finding the Space for Reduced Class Sizes: Creating a Problem or Finding a Solution

In highlighting the relationship between principals' use of space and their achievement level, we are not suggesting that schools implementing class size reduction initiatives should use every means necessary to create the space to accommodate more classrooms. Indeed, in several instances the decision to create additional classrooms either to maintain the 15:1 ratio or configuration or 30:2 configuration appeared to come at considerable cost. For example, in several schools, the school's decision to create more space for CSR eliminated art and music rooms. In other instances, researchers

noted that classrooms created to accommodate smaller class sizes seemed unfit for learning. These concerns were further reflected in the views of classroom teachers. A Bethany teacher described the instructional costs and hidden emotional costs for students when one room is transformed by a divider into two. [When she had her own classroom], "the children were freer to discuss with each other and learn from each other. Now this year they cant say a peep because you have two teachers voices in the same room, so they really have to focus on who is talking to them even though the divider is up….first of all….when you share half a classroom, the children, I think they really feel like caged rats, When we get up to go the bathroom or anywhere, they have to follow a certain path because it's the only way out." In another school, creating two small classrooms out of one required moving books and other instructional materials to other rooms including other classrooms already filled by equipment and books, leading teachers to confide that they their school was becoming a fire hazard.

In short, across schools, principals struggled (with varying degrees of awareness and ability) with how to maximize classroom space to accommodate smaller groups of students without compromising other aspects of the learning environment. In this area as in others explored below, principal leadership for class size reduction demanded instructional judgment and an orientation toward creative problem-solving

Serving Students with Disabilities and English Language Learners

Salience of the Issue

Students with disabilities and English language Learners tend to be well represented in poverty based initiatives (Thurlow, 2002). SAGE is no exception. In our sample, special education students made up 8-38% of the student population in SAGE schools. English Language Learners made up 1-37%. State-wide indicators suggest enrollment numbers for both groups are rising

(Hawkins, 2005). Ironically, the literature based on class size reduction is relatively silent about the whether and how these particular student populations benefit from the program (Graue and others, 2005; Hawkins, 2005). The silence reflected in the research base stands in stark contrast to the importance principals in our sample assigned to the issue. Across schools, principals viewed supporting the needs of ELL and special education students as a top priority for their school.. However, while all giving lip-service for the need for strong school leadership in this area, principals displayed very different orientations to addressing these needs. As in the case of space shortages, these orientations were linked in significant ways to schools' achievement profile.

Contrasting Orientations

Maintaining the Status Quo of Separate and Pull-Out Programming

By law, students with special needs are supposed to be placed in the least restrictive environment. Four out of nine principals responded to the challenges described above by maintaining the status quo of separate pull-out and separate programming for special education and English Language Learners. In principle, these principals supported the idea of keeping students in their classrooms rather than pulling them out. However, they tended to view class size reduction initiatives as precluding the possibility of maintaining inclusive programming. For example, after trumpeting the benefits of inclusive programming, the Gallows administrator went on to describe her decision to move her school back toward self-contained programming while implementing CSR. "We still do that [provide services in the classroom] but it's a little more difficult because we have more classrooms." Reflecting the perspectives of the other 5 principals in this category, the principal views class size reduction policies and policies for mainstreaming special populations of students as somewhat competing priorities. In response, he decided to move toward a more self-contained approach to instruction as they reduced class sizes. The school assigned resource special education

teachers to work with 3-4 classrooms and assigned each teacher a case load of approximately 15-18 students. In order to manage the case load across these classrooms, the school opted for a pull-out model, pulling students assigned to smaller class sizes out of these classrooms for support services.

Two of the four schools where principals viewed CSR as incompatible with inclusive programming were low achieving schools. In these schools, field researchers documented multiple instances in which students in smaller classrooms were pulled out of their classrooms to receive separate instruction. Consistent with the research on the instructional effects of pull-out programming, researchers found that this approach created many disruptions within classroom and the lesson, both for regular education students but also in particular for the students who left for remedial instruction in another room. Two of the four schools were high achieving schools. However, at one, the principal was in her first year as principal of the school. Furthermore, this new principal displayed problematic practices in two out of the three categories we address.

A contributing factor behind principals' movement toward self-contained classrooms appeared to be their lack of awareness about the possible points of synergy between CSR and inclusive programming. When asked to describe his school's approach to meeting the needs of ELL students in the context of CSR, the Wellstone principal responded matter of factly, "its pull-out with those 300 ELL its pull-out." In addition, principals who chose to maintain separate programming for special education students also demonstrated very little awareness of current knowledge in the field about effective instructional practices. For example, one school moving toward more inclusive programming decided to return to self contained classrooms for mathematics after determining that a new math curriculum was simply inappropriate in a mainstreamed classroom with a smaller class size. The principal recounted,

"We did try to have everybody using the same curriculum but then we went to math investigations and that curriculum is built on dialogue. The discussions are an important part of that curriculum. Well. When you have two or three children in a math group like they would, in special education, they didn't have a lot of ideas about how to solve the problems, they were not making any gains and we tried everything we could think of that was going to make it work, well [investigations] the name of the new curriculum was not working with our special education students."

The principal failed to understand that that the power of an inclusive program is to allow students in special education to experience discussion based math with peers who could engage in discussion. Had he possessed that understanding or perhaps believed in the possibility, the school might not have rejected discussion based math for special education students and likely would have found creative ways to marry the benefits of CSR with the benefits of inclusive programming.

Finding Synergy between CSR and Inclusive Programming

In contrast, five out of nine principals viewed inclusive programming as leveraging rather than competing with the instructional goals of reduced class sizes. These principals worked aggressively to design service delivery structures that maintained special education students and English Language Learners within regular classrooms. For example, several schools adopted co-teaching models where Title I, special education and/or ELL teachers assisted students within the classroom for significant parts of the day. Through this approach, the students were both in smaller classes but still surrounded for several hours of the day by professionally trained staff with some degree of expertise in best practices for instructing these students. Principals adopting this approach emphasized the importance of coordinated instructional supports for students as reflected in the comments of the following Montford principal:

"We have got all these teachers that are pulling these kids out of all different directions, sometimes pulling at the same time and sometimes at different times, how can we use all the staff that we have the best? So, we decided if we could create a smaller classroom for one hour a day in every room, we were going to do that. So we took all the special needs people and assigned them as co-teachers for one hour a day during language arts in every classroom. So that kind of started the same time SAGE came in and we wanted to keep both of those pieces together…. So we have a co-teacher model."

The principal's comments highlight the realities of implementing class size reduction initiatives in a climate of scarce financial resources. The principal asks, "how can we leverage our staff in ways that provide continuous and inclusive services to all students?". Rather than having one special education teacher assigned to several classrooms, the principal assigned one special education teacher to work each day with the same classroom for an hour of language arts. He viewed this strategy as consistent with CSR because the students receive instruction for some portion of the day in a classroom of 10-15 students. Across schools, teachers repeatedly stressed how the integration of inclusive programming with CSR established the conditions for more responsive teaching in making regular classroom teachers more familiar with special education and ELL teachers. "Now we know who they are." a West Canton teacher commented. "We have these conversations where we learn so much more from the kids, where we can do so much more."

Patterns linking principals' orientations to inclusive programming and their achievement profile provide further evidence of the importance of these orientations for school improvement. Leadership practices that found synergy between CSR and inclusive programming were concentrated in schools' demonstrating higher levels of achievement. Three of the five were rapidly improving schools and one was a high achieving schools. The fifth school was a low achieving school located in

a small predominately white rural district with a rapidly growing ELL population and special education population.

Inclusion or Isolation?

As in the case of space shortages, the issue of inclusive programming and class size reduction presented school leaders with complicated issues. Principals that found ways to maintain inclusive programming while reducing class size were not spared these tensions. One tension involved the possibility of recreating restricted environments through smaller class sizes. Reducing class size while maintaining inclusion may on the one hand may provide students with the best of both supports; they are in regular classrooms, the classrooms are small enough to enable teachers to be responsive to them and in addition, for a few hours a day, they may also receive supplemental teaching supports. On the other hand, in resource strapped environments, one of the simplest ways to enable this instructional design is to cluster students with particular needs across a select number of classrooms. Clustering refers to the practice of placing students with similar learning needs [placing ELL or special education students together] so that support staff can work with them inside of classrooms for longer periods of time and without having to pull them out for supplemental services. But when students are clustered, they also are at greater risk of being isolated from regular education students, because they make up a greater proportion of the class than in a smaller classroom than they do when the same number of them are clustered in a large classroom (see also Hawkins, 2005 on this point).

Building Teacher Capacity

Salience of the Issue

When class sizes are reduced, the learning environment of the classroom changes, requiring both readjustments and frequently new learning on the part of teachers. Teachers and principals

across all schools made frequent reference to the importance of professional developments as a part of CSR implementation and offered the following rationale. When working with classrooms of fifteen students or less, teachers cannot simply use the same strategies that they used with larger groups of students. Under SAGE [when principals choose to reorganize classrooms into 30:2 configurations], teachers who may have spent their entire teaching career working solo in their own classrooms suddenly find themselves sharing "their" space and their children with another teacher. In 30:2 configurations, planning once done independently must now be coordinated. When class sizes are reduced, teachers in schools with inclusive models may "lose" their special education assistant and may be required to collaborate and seek new forms of assistance from ESL and special education teachers for addressing the needs of students with severe behavioral problems.

Significantly, teachers that highlighted the importance of teacher professional development linked to CSR were experienced in the classroom and had knowledge of best practices in the field. However, they were unsure how to adapt general strategies to their work in smaller classrooms, with fewer students. Referencing something that she had learned in a recent workshop on mathematics, a veteran Earhart commented, "with really young kids it sounds good but they cannot just do something by themselves for very long, Its really difficult to apply that [training on small group instruction]." For this teacher and other teachers, class size reduction created a very specific and new set of teaching skills not necessarily covered by traditional district staff development fare.

While scholars have long noted the importance of professional development in the success of class size reduction initiatives, the literature remains relatively silent about the mechanisms and leadership practices at the school and district level that enable meaningful professional development for CSR. While all nine principals made general references to the importance of providing

professional development for CSR, they described very different orientations in describing their role in this effort.

Contrasting Orientations

Pro-Active Approach

4 out of 9 principals made a deliberate effort to expand learning opportunities for SAGE teachers in areas directly linked to SAGE goals. By their own and teachers' reports, these principals seemed to be more conscious of the need to provide teachers with continuous professional development linked to the overall goals of class size reduction. This included organizing school-based workshops linked to the following: more individualized learning approaches; best practices in teaching reading to younger students; and team teaching.   In many instances, the staff development that teachers in these schools identified as useful was in fact organized and supported by the district, However, principals adopting a pro-active approach to professional development expanded these opportunities through school-based professional development and on an individual level, by brokering resources for SAGE teachers when and where they needed it. In these and other ways, principals adopting a pro-active approach sought multiple routes to provide teachers with concrete information that addressed issues pertinent to teaching in smaller classrooms.

Principals adopting a pro-active approach to staff development viewed the primary motivation for professional development as one of helping teachers teach in ways that were responsive to the needs of individual students. The Earhart principal describes her efforts to in-service teachers around new forms of assessment, "we are also looking at the subgroups but also at each individual child and as a team or as a working group being able to make decisions an adjust our teaching related to what is working for this child and what does this child need in order to be successful." Reflecting the perspective of principals taking a pro-active approach, the principal views professional development

in areas such as assessment, teaming, individualized instruction as an essential component of translating reduced class sizes into better student outcomes and views the teaching challenge of reduced class size as one of not only teaching in new ways, but using assessment to continually make ones' teaching more responsive.

In addition, "pro-active staff development" principals believed that teachers needed to learn skills of collaboration if they were to share a room of 30 students with another teacher. These principals viewed these skills as involving much more than "getting along." Articulating her beliefs on this topic, the Earhart principal stated,

> I don't believe in sort of enforcing it or forcing it on people who aren't ready for it. That's not the way to get success. If you're not ready to be a team teacher, if you can't see yourself as a team teacher, you don't understand how that's going to help kids, let's not give it to you. That's not going to work. But on the other hand, if you incorporate these pieces into more staff meeting discussions so that people are sort of "how did you manage that, because we've got to two teachers in our room, tell me about that?" So that we start to sort of orchestrate that."

This principal described herself as working slowly but steadily to build a stronger professional community in the school, for example by building discussions of teaming into staff development meetings. For her and other principals of rapidly and high performing schools, implementing SAGE to the spirit of law, went beyond rearranging staffing patterns. It involved expanding opportunities for teachers to move from an "I to a we" mindset.

In two instances, it also involved, securing funding to provide an outside facilitator to help regular classroom teachers analyze collectively student assessment data for low performing students and identify their primary needs. In another instance it involved, finding ways to provide regular collaborative time for teachers (who may not share a classroom) but who worked well together and

regularly shared curricular ideas and resources. In a fourth instance it involved creating new teacher teams composed of both support services (special education, Title I and ELL) and classroom teachers. In the context of half day in services, the teams analyzed student performance data and used that data to make decisions about how to cluster children in mainstreamed classrooms.

Analysis of these patterns suggests the potential importance of a pro-active orientation to staff development for CSR in explaining positive student outcomes. The two schools in which principals displayed a pro-active orientation were rapidly improving schools. In interviews, teachers affirmed the importance of school level leadership for professional development linked to CSR. Referring to what she considers an important dimension of her schools' success, a Calloway teacher commented, "Yes that [learning how to teach to individuals and being able to individualize instruction] is very important. And even though I have been doing this for 23 years, its like every year, I am still like, Wow."

Sink or Swim

5 out of 9 principals displayed what we call a sink or swim approach to building teacher capacity for class size reduction. These principals maintained that while reduced class sizes did place some new demands on teachers, teachers could learn new skills in the context of their classrooms. They also viewed teachers' ability to share classrooms as primarily a function of their personality, an inherent trait rather than an acquired skill. Consider these examples. In her first year as principal of a SAGE school, the Bethany principal confronted strong teacher resistance to the teaming concept, but told her staff, "we simply have to do this . . . I said believe me you will need the two of you adults throughout the day to work with these children . . .They [the faculty] were not real happy with me." This principal, reflecting the comments of four others placed little emphasis on the importance of on-going professional development for teachers as part of their transition into new classrooms and

classroom configurations. Instead, she viewed her leadership for SAGE (and her perceived success with the program) as placing pressure on teachers to collaborate and digging in her heels when faced with teacher resistance.

Sink or swim principals also gave little if any attention to what teachers might need to learn before being asked to share a classroom with another teacher. They tended to allow teachers' personalities to drive staffing and teaming decisions. For example, the Wellstone principal only required teachers to team when he knew they liked each other. From his perspective, team teaching and collaboration was not something one could mandate:

> Just because we've learned over the years that if you're going to work with somebody, two teachers work together, it better be your own idea. Because if you think about, it depends upon your philosophy of how kids learn, your management style. We've tried that, where you put two teachers together, now go team-teach. We have to call the police.

Reflecting the perspective of other sink or swim principals, he placed the onus on teachers to learn how to teach in classrooms that had smaller groups of students and where they might be sharing teaching responsibilities with another teacher.

Principals displaying a sink or swim approach also did little to open the door for more dialogue between and across regular classroom teachers and ELL/Title I and special education teachers. These principals described themselves and were described as encouraging their teachers to attend staff development. [largely around literacy and mathematics]. However, they created few opportunities for teachers to sit down with ESL teachers for example to talk about the needs of specific students and share expertise around designing interventions to meet their needs. They structured common planning time in ways that precluded participation of ESL and Title I teachers with regular education teachers. In these schools, ESL teachers or Title I reading teachers that

worked with a particular grade level did not have the same common planning time as classroom room teacher working with that grade level.

Two of the five schools where principals displayed this orientation were low achieving schools. Two schools were high achieving schools, but had brand new principals. Suggesting possible explanations for these linkages, teachers in sink or swim schools described being required to participate in staff development that was disconnected from their needs and interests. A McMahon 1st grade teacher had this to say: "Fore a full year and a half we had literacy. We were taught things that most of us already know." And later in the interview, she stated, "we don't have planning time. We sit through meetings." Teachers in "sink or swim" schools believed the principals could play an important role in staff development. In fact, they craved this leadership. "You bet an administrator makes a difference." commented the McMahon teacher. Recollecting a time when the principal of the school displayed these characteristics, " when [former principal] was here, everything was going smoothly, we were learning, we were working, ok that [what we tried in the classroom is not quite right, lets tweak it, it was a total learning environment." Taken together, these patterns, suggest the importance of further investigation of how principals' orientations to building teacher capacity shape the implementation and outcomes of CSR..

Principals and Instruction in CSR: Facilitators, Targets, or Both

Our analysis of data suggests yet another paradox involved in school-level implementation of class size reduction. Without active leadership around professional development (from the principal and other administrators) teachers involved in CSR are left to sink or swim. They are placed in small classrooms; but offered little opportunities to learn the skills to teach effectively within those classrooms. They are pressured to demonstrate improved student achievement, but left to figure out on their own how to develop assessment and use assessment data in ways that contribute to student

achievement. However, In general, principals currently appear to lack the capacity to exercise that leadership as evidenced in both teachers' accounts and in analysis of principals' statements. Across schools, principals displayed very little understanding of the nuances of instructional content and classroom design. They tended to describe their own work and teachers work on CSR in ways that seemed somewhat divorced from the immediate contexts of classrooms – what kind of instruction in reading was possible in a reduced class size; how the cultural backgrounds of students might inform teachers' instructional choices.

One additional issue related to this dynamic is worth noting. Principals who assumed pro-active leadership for professional development, were also principals who displayed considerable skill around the creative deployment of Federal resources. For example, they had developed strategies for using Title 1 monies to pay for teachers' attendance at workshops or to hire consultants to conduct workshops on assessments. Half of the principals in our sample appeared to lack basic understanding of how Federal and state resources could be deployed creatively to support CSR goals. For example, some admitted that they weren't sure what it meant to a school-wide Title 1 school, even though their poverty rate made them eligible and even though that eligibility would have increased the flexibility available to them in using Title 1 monies. Thus, while principals exercise important leadership for professional development, that leadership is relatively meaningless unless principals themselves develop more in-depth knowledge of both teaching practices and policy.

To summarize, within a sample of nine schools all in advanced stages of implementing class size reduction principals displayed very different orientations towards school level implementation of CSR. Faced with space shortages, some principals respected the primacy of the classroom as the learning environment in solving space problems. They knocked down walls, put up dividers, transformed spaces used for non-instructional purposes into classrooms. Reflecting a different

orientation, other principals let school tradition or teacher preferences dominate when space issues arose. They appeared to worry more about tradition and keeping the piece than providing students with opportunities to be in classrooms crowded with other students (an arrangement most students in private schools are afforded). Seeking to maximize CSR for students with diverse learning needs, some principals sought ways to use SAGE as a catalyst for larger structural changes necessary for improving the classroom environment for all children, e.g., by moving towards more inclusive classrooms. In contrast, while purportedly embracing the vision of SAGE and its emphasis on the needs of all students, including those with disabilities, other principals made decisions that had the potential of further isolating these students and providing them with lesser curriculum. Finally, some principals saw on-going professional development for teachers as a necessary rather than peripheral component of achieving SAGE goals. They did things that expanded teachers' knowledge of assessment and individualized instruction. Most principals however, took a sink or swim approach to teacher learning and displayed little interest and awareness of their role in transforming teaching inside of smaller classrooms.

Table 2

Class Size Reduction in Practice: Investigating the Role of the School Principal

Challenge	Orientation	Patterns	Paradox
Not enough classrooms to accommodate small class sizes	1. Maintain school tradition around use of space 2. Maximize use of classroom space through remodeling	Principals of improving schools maximize use of space through remodeling	Space for regular classrooms/limited space for art and music Enough small classrooms/inhospitable learning environments
Integrating inclusive services with smaller class sizes	1. Inclusive services and smaller class sizes are competing priorities 2. Providing inclusive services in smaller class sizes maximizes impact	Principals of improving schools work to integrate inclusive services with smaller class sizes	Smaller class sizes/uneven distribution of students
Building teaching skills demanded by smaller class sizes	1. Collaboration is not something that can be taught. 2. What teachers need to learn they can learn through practice	Principals of improving schools design staff development in collaboration and instruction for smaller groups	Principal leadership key/principals expertise in instructional practice

Conclusion

Principals' responses to these patterns correspond in broad strokes with their schools'

achievement levels. As displayed in table 2, principals of rapidly improving schools and high

achieving schools were heavily represented in column A. In contrast, principals of low achieving

schools were more like to be represented in column B. Clearly, schools' level of improvement turns

on a complex array of leadership conditions which we have only begun to explore in this paper.

However, taken together, these patterns suggest potential levers for strengthening leadership practice

in ways that maximize the benefits and outcomes of poverty based policies for students. We identify

and discuss several levers below.

Building Leadership Skills to Support CSR

These findings suggest several implications for the knowledge and expertise that principals

need in order to implement the kinds of reforms of the stripe currently demanded by much state and

Federal policy. First, principals need knowledge on how to restructure service delivery in ways that

maximize human and financial resources for schools' most vulnerable students. Principal preparation

and district expectations tend to give principals skills in constructing budgets and the basics or

minimum skills required to meet diverse learning needs (e.g. LEA representative roles in the IEP

process). This however leaves principals woefully unprepared to understand, create, and lead the

kind of restructuring that our own and others data suggest helps transform CSR into improvements in

teaching and learning.

Beyond Knowledge Acquisition: A Focus on the Beliefs that Underlie Action

Second, our analysis highlights the interconnection between leadership practice and policy

sense-making. Clearly, whether and how principals assume leadership for class size reduction

depends in part on the stakes and resources attached to CSR initiatives. As discussed above, it depends on helping principals acquire the detailed knowledge of special education, Title I, ELL and school funding streams, creativity to see a better way, and a set of practical skills to create schedules, staffing plans, and financial support for restructured service delivery.

However, as important as **what** school leaders know are the views and beliefs that they carry into their work. Behind differences in principals' leadership practice – differences which we found were related to schools instructional achievement – were different ways of viewing and acting upon fundamental aspects of school change. For example, space shortages were a common challenge across nine schools as identified by principals. But, some principals balked at breaking with tradition to create the space for smaller classrooms. For other principals, tradition meant little and they were happy to knock down walls to create more classrooms. Staff development that simply provides principals with the technical understanding of how to implement CSR may have little impact. Instead, principals may also benefit from professional development that helps them grapple with the underlying motivations of their behavior including, their attitudes toward change and/or their educational philosophies.

Crafting Policies that Acknowledge the Paradoxes of School Leadership

Principals may be able to gain some of this knowledge by working with teachers and listening carefully to what teachers say about the expertise and support they need. However, like teachers, effective leadership for class-size reduction also depends on crafting structured learning opportunities that help principals develop new skills and change their practices. Part of making this happen involves casting school level leadership for class size reduction in its true light. As reflected in the analysis above, at every turn school leaders face dilemmas for which there are no easy answers. Should students be placed in smaller class sizes at the expense of having their own art and music

room? Should students with special needs be placed in small classrooms at the risk of further segregating them from mainstreamed students? Regardless of their orientation, principals and other school leaders benefit when policy designers acknowledge these complexities and structure learning opportunities that help school leaders evaluate the trade-offs of their decisions.

<u>Future Research</u>

This paper has been organized around three leadership challenges that dominate school level implementation of class size reduction initiatives. In conclusion, we suggest the following lines of analysis as important areas for future research on school level leadership for class size reduction. First, in this analysis, we have focused primarily on the role of the school principal in establishing supportive conditions for meaningful change. However, our own and others research (c.f., Spillane, Diamond and Halverson, 2002; Burch and Spillane, 2003) has revealed the ways in which leadership for instruction stretches across school communities. In the next stage of our research, we will be looking more closely at how leadership for CSR stretches beyond the principal and is distributed across formal and formal leaders at the school level including classroom teachers, subject area specialists and parents leaders.

Looking more closely at how leadership for CSR is distributed is important for other reasons. HOW principals lead turns in important ways on the views and actions of administrator at higher levels, e.g. the district level. Through their decisions and actions regarding funding, professional development, curriculum and assessment, among other areas, district staff set the tone for school-level implementation of class size reduction. More research is needed that explores the nature of district influence in the specific context of class size reduction and more generally in poverty-based instructional reforms. This involves asking questions such as: What role can and should district staff play in building principal leadership for class size reduction? In addition to creating new policies,

what existing district practices might need to be revised or eliminated in order to unleash the power of small class sizes at the school level?

Finally, the aim of much of the work in policy analysis is to demonstrate how school level implementation deviates from policy intent. In this article, we take the position that in order to craft better policy, policy makers need to possess richer conceptions of how people implementing those policies think and feel. More research is needed that accounts for the role of policy and community in shaping principals' and other school leaders images and visions and how those images shape what CSR comes to mean for the students who are its intended beneficiaries.

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Endnotes

1. In one school, Gallows, researchers were unable to interview the school principal. In this school, we interviewed the individual with the title of Program Implementer. This individual was identified as assuming many of the administrative responsibilities typically assumed by the principal.

2. All names are pseudonyms.

3. At Gallows, the program implementer was interviewed twice.

4. See also Hammemberg and Hatch (2005) on this point and for a fuller exploration of the value of smaller class sizes in literacy instruction.