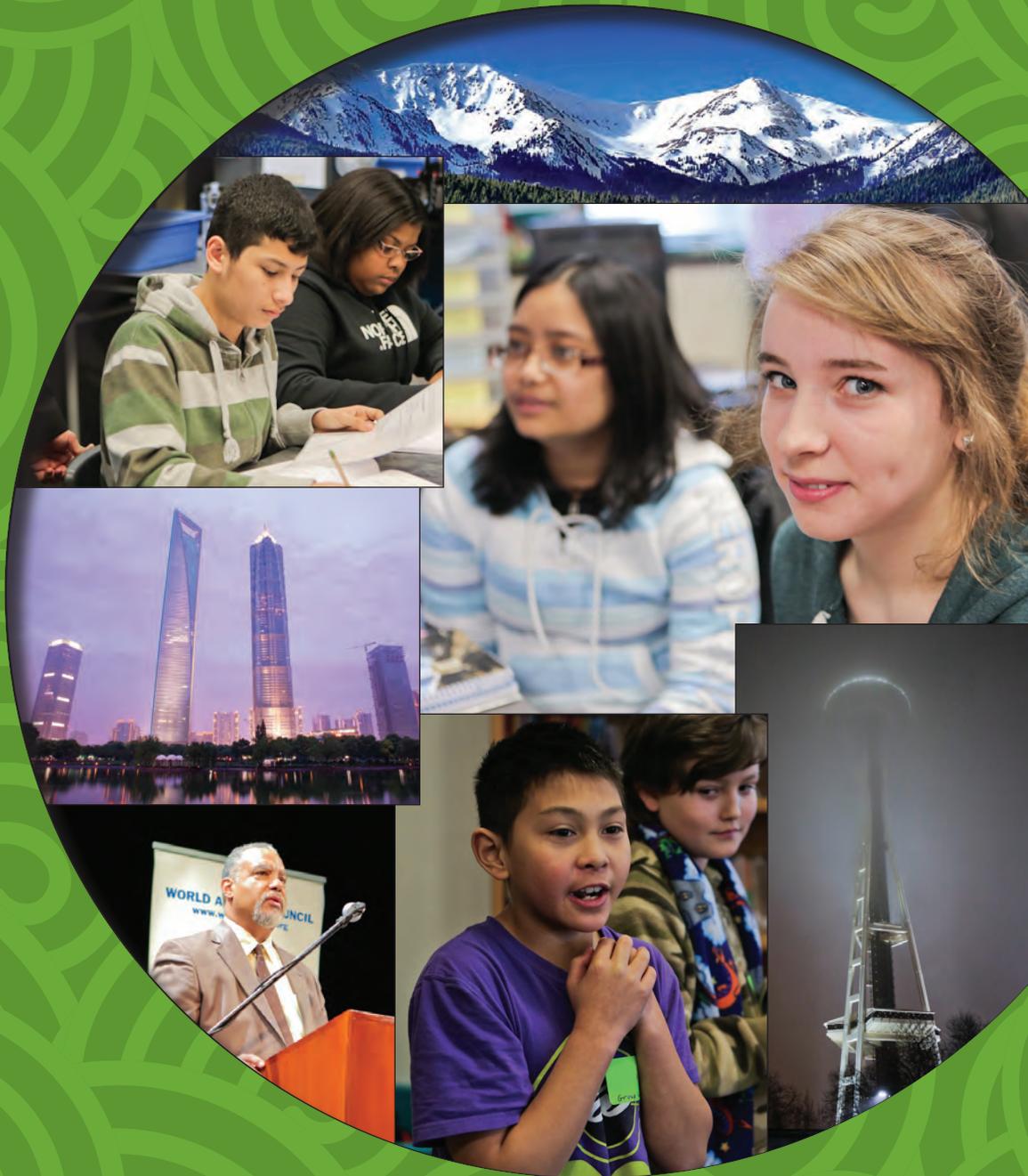# Improving Performance of Low-Achieving and Culturally and Linguistically Diverse Students

Asia Society®

Partnership for Global Learning

Global Cities Education Network

Improving Performance of Low-Achieving and Culturally and Linguistically Diverse Students

February 2013

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FOREWARD

Globalization of the economy, increasingly diverse and interconnected populations, and rapid technological change are posing new and demanding challenges to individuals and societies alike. School systems are rethinking the knowledge and skills students will need for success and the educational strategies and systems required for all children to achieve them. In both Asia and North America, urban school systems are at the locus of change in policy and practice—at once the sites of the most critical challenges in education and the engines of innovation needed to address them.

Therefore, Asia Society organized the Global Cities Education Network, a network of urban school systems in North America and Asia to focus on challenges and opportunities for improvement common to them, and to virtually all city education systems. A critical element of high-performing school systems is that they not only benchmark the practices of other countries, but they systematically adapt and implement these practices within their own cultural and political contexts. The Global Cities Education Network is intended as a mechanism for educators and decision makers in Asia and North America to *collaboratively* dream, design, and deliver internationally informed solutions to common challenges with which education systems are currently grappling.

The network engages in cycles of in-depth inquiry, planning, and action to address specific topics related to the themes of transforming learning and achieving equity. Each cycle involves knowledge sharing and problem solving, including at Global Cities Education Network Symposia and the production of research and knowledge products such as case studies, background papers, and meeting reports. The overarching goal is to develop practical wisdom from the research and experience of the world's leading experts that reflects proven or promising efforts in network cities, and that can be used to enhance the effectiveness of network and city school systems worldwide.

The initial participating cities are Chicago, Denver, Hong Kong, Melbourne, Seattle, Seoul, Shanghai, Singapore, and Toronto. The first meeting of the network took place in Hong Kong on May 10–12, 2012. Participants there identified several common high-priority problems of practice and agreed to initially focus on two: the need to develop and sustain a high-quality teaching force, and the need to improve educational outcomes for low-performing and linguistically and culturally diverse students.

For each topic, a strand of work was initiated, beginning with a practice-based study involving network cities as collaborative partners in all aspects of the investigation. *Global Cities Education Network Study Number 1: Developing and Sustaining a High-Quality Teacher Force*, was led by Linda Darling-Hammond, Charles E. Ducommun Professor of Education at Stanford University. *Global Cities Education Network Study Number 2: Improving Performance of Low-Achieving and Culturally and Linguistically Diverse Students*, was led by the Ontario Institute for Studies in Education, University of Toronto. Initial results from each study were presented at the second Global Cities Education Network Symposium on January 17–19, 2013, in Seattle, Washington.

This report is the final result of the Ontario Institute for Studies in Education study, which focused on the efforts of five school systems in the Global Cities Education Network (Chicago, Denver, Seoul, Shanghai, and the EdVisions charter school network) to understand and mitigate systemic differences in school

outcomes that are caused by demographic factors in students, such as socioeconomic status, ethnicity, migration status, or disability. It is intended to stimulate discussion within the network and around the world.

The first section of the report outlines some of the generic characteristics and challenges of urban education in regard to inequities in achievement and their causes and consequences. This sets an analytic context for the rest of the discussion, which focuses on the achievement challenges and strategies in each of the five jurisdictions. A final section of the paper draws conclusions and poses issues and questions for discussion. Also appended are brief reports with more information on each of the participating jurisdictions.

We at Asia Society hope that this series of reports provides knowledge and experience useful to Asian, North American, and other cities eager to create the conditions that will promote success for all students in today's interconnected world.

We would like to thank the sponsors of the Global Cities Education Network, including: Carnegie Corporation of New York, JPMorgan Chase Foundation, Bill & Melinda Gates Foundation, Pearson Foundation, Medtronic Foundation, MetLife Foundation, and The NEA Foundation.

Tony Jackson
Vice President, Education
Asia Society

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EXECUTIVE SUMMARY

This report is on the efforts of four districts (Chicago, Denver, Seoul, and Shanghai) and one charter school network (EdVisions) to understand and mitigate systematic differences in school outcomes that are caused by demographic factors in students, such as socioeconomic status, ethnicity, migration status, or disability. It is intended to stimulate discussion at the Seattle GCEN meeting and within each of the participating districts.

The analysis relies on data found in the public domain or supplied by the systems themselves. The systems differ from each other in many ways, including size, demography, culture, politics, and resources. Therefore, this report is to be considered at a general level. The analysis also assumes that schools can make a difference in student outcomes, but that social conditions matter more school influence.

There is increasing evidence on the effectiveness or lack thereof of various improvement strategies. Current thinking is that a focus on daily teaching and learning practices is vital, supported by other related approaches, and that many common strategies that focus on governance, structure, or accountability are not as effective. There is limited evidence on strategies that focus outside the school—for example, on families and communities. It is important to think systemically about improvement rather than adopting a large number of unconnected initiatives.

Each of the systems in this study face differing challenges in terms of student achievement. Each has adopted a range of strategies for improving outcomes and reducing achievement gaps. Some general questions that arise regarding these efforts are as follows:

1. Does each system have a clearly stated plan with a small number of priorities linked to specific actions and resources? Are the priorities and actions clearly linked to a view of the causes of lower achievement?

2. Are the strategies that are in place in each system consistent? How do schools and the system deal with prioritizing their strategies?

3. How can districts best balance their overall focus and strategy with an appropriate degree of decentralization and autonomy for schools or groups of schools?

4. How are improvement strategies connected to research-based evidence? How can districts ensure that their efforts are strongly grounded in evidence?

5. What measures are the districts using to evaluate progress? What other measures could be adopted to help achieve a broader understanding of system goals and progress?

6. What is the implementation strategy in each system? What is the process through which the systems learn about possible policy changes designed to help achieve system goals?

1. Introduction: Purpose, Approach, and Limitations

This report is on the efforts of four districts (Chicago, Denver, Seoul, Shanghai) and one charter school network (EdVisions) to understand and mitigate systematic differences in school outcomes that are caused by demographic factors in students, such as socioeconomic status, ethnicity, migration status, or disability.

This report is one part of the broader Global Cities Education Network project. It is intended as a background for the GCEN meeting in Seattle in January 2013. Although based only on those jurisdictions mentioned above, the report is meant to be useful to all participants in the network. The report is intended to promote discussion and does not represent the policies or opinions of any of the participating jurisdictions or project sponsors. A final revised version will be issued following the discussion in Seattle.

The first section of the report outlines some of the general issues and concepts around urban education, as well as inequities in achievement, and their causes and consequences. This is to provide an analytic context for the rest of the discussion, which focuses on the achievement challenges and strategies in each of the five jurisdictions. A final section of the paper draws some conclusions and poses issues and questions for discussion. We also append brief appendices with more information on each of the participating jurisdictions.

Limitations
This project poses some significant intellectual challenges in that it requires an attempt to understand very diverse systems and to say something reasonable about them in regard to a complex set of issues. It is not possible within the scope of this project to do justice to these systems in terms of providing a full understanding of their contexts or improvement strategies. The report should therefore be read with this in mind and should be taken as indicative rather than definitive.

A substantial body of literature is relevant to this project—for example, studies on system change and improvement of all kinds, on education policy and politics, on how research informs practice, on effective school practices, on governance and accountability issues, and so on. Additional literature on the development and current state of education in each of the various countries is also relevant for reasons of context. However, no individual or small team could review or master all of these bodies of knowledge, and even a summary attempt to discuss research in all of these areas would require volumes. In order to keep this report readable and brief, there are few references included; a fuller (but still very partial) reading list is attached.

The analysis of the systems' issues and strategies relies on information that was either provided by each of the participating cities or found in the public domain. The systems differ in the amount and specificity of the information they have available. Much of the information is written for insiders and therefore requires some interpretation to be understood by those outside the system. In those jurisdictions that do not operate in English, many of the relevant materials are simply not available to the research team. Chicago withdrew from active participation fairly early in the process, so virtually all the information about Chicago is from the public domain.

2. The Challenges of High and Equitable Achievement in Urban School Systems

An increasing proportion of the world's population lives in cities, and cities everywhere are becoming more heterogeneous. This places increasing challenges on city school systems, and all around the world, to ensure that all students, regardless of background, can benefit from a high-quality education. The increasing diversity in the population in each city is not only an educational challenge, but it also makes politics more contentious and governance more difficult. Moreover, there is considerable debate about which student outcomes matter; while traditional academic outcomes matter greatly, there is also growing interest in a broad range of other outcomes, and in how to prioritize among these different outcomes.

Cities around the world face some of the greatest challenges in terms of producing high and equitable levels of student outcomes in schools. However, at the same time, cities also have many advantages when it comes to supporting good outcomes.

Variation in student outcomes is generally related to one or more of several factors. The most powerful single influence on student outcomes, in virtually every study and in virtually every place, is some measure of socioeconomic status (SES), whether parental occupation or income or education level—or, in the case of PISA, various kinds of cultural possessions in the home. Universally, the environment in which children grow up has a strong effect on their life chances in every regard, including in school. In virtually all studies of education, SES is the single most influential element affecting student outcomes. SES has its effects in many ways, influencing children's opportunities, their health, the kinds of interactions they have with adults, the stability of their housing situation, their access to enrichment, and so on. On average, students from less advantaged households or families will have lower levels of achievement and poorer outcomes.

The power of the relationship between background and education appears to vary considerably across countries. PISA data show that in some countries these relationships are much stronger than in others: high in the United States, moderate in Singapore and China, lower in Canada and Korea.

In general, variation in student outcomes is larger within groups than between groups. In other words, there is more variation in achievement among twelve-year-olds than there is on average between twelve-year-olds and thirteen-year-olds, and there is more variation among students of a certain ethnic background than there is between one ethnic group and another. This is an important regularity that is often ignored in policy making, where our attention is drawn to differences between groups. In school systems, student outcomes vary more within classes than between classes, and within schools than between schools.

However, analyses of variance in student outcomes do show that systems vary in this regard as well. In some systems, it matters a great deal which school a student attends, because school quality varies greatly, or because students are streamed into particular schools based on perceived ability. In other systems, most of the variation in student outcomes is within schools; different individuals or classes have very different outcomes even within the same school. These situations have different implications for the systems. If there are large differences among schools, it is important to understand why this is so. Is it related to the selection of students? Teacher quality? Program offerings? Whatever the case may be, in order to raise achievement levels across an entire system, attention must be placed on all classrooms and on all schools, not just those with the lowest performance levels.

Also, as shown in research by Wilkinson and Pickett (2009), past a certain basic level it is not the actual level of wealth that matters in a country but the degree of inequality. That is, countries with less income inequality tend to have better outcomes, not only in schooling, but in all areas of social policy as well. Therefore, the overall level of inequality in each country is important. Unfortunately, income inequality is rising in all of the countries in this study (with the possible exception of Singapore), so the problems facing the schools in relation to socioeconomic influences on students are getting worse, not better. In the face of worsening social conditions for many children, just keeping levels of achievement from declining is an accomplishment.

While socioeconomic status is the most powerful single influence on educational outcomes, it is not the only important factor. First language, ethnicity, and migration status are also important. In most cities and countries, some groups of students have consistently poorer outcomes related to one or more of these three factors. These factors are often interrelated and are also connected to socioeconomic status. Migrants tend to be poorer and have lower educational levels. People speaking languages other than the dominant one are often migrants and again may have lower levels of education and lower incomes, in part due to discrimination in the labor market. So the various elements of disadvantage can reinforce each other.

Disadvantage operates cumulatively as well. For example, a child who has to move often may fall behind in schooling, even if he or she works hard and has parental support. Poor living conditions can lead to worse health, leading to more missed days of schooling. Students may then be placed in less demanding programs with lower expectations, leading to lower performance, even while the same issues of mobility or health continue to make it more difficult for them to catch up. Parents are less able to advocate effectively for their children. One disadvantage builds on and increases the effect of another.

All these factors are especially at play in cities, which continue to be destinations of choice for those hoping to better their lives. Cities tend to attract highly varied populations, leading to interesting mixes of population. Such is the case for each city in this project, although, as the cases below show, these patterns play out very differently in each of the participating cities.

On the other hand, cities also tend to have significant resources that can assist social mobility in various ways. They offer cultural and other resources to young people, even if the families do not always have access to them. They offer the possibility of a rich social life and more opportunities to meet people and explore new pathways. They have more social services and support, more employment opportunities, and less rigid social structures—all of which makes cities attractive to newcomers.

Though it is not a subject of this study, disability also plays a critical role in shaping student outcomes. In every country, the proportion of students thought to have some kind of disability has been increasing, and there is a very large achievement gap between students placed in special education and those who are not. Disability also intersects with the other factors noted above. For example, in most systems, disproportionately large numbers of students from poor and minority backgrounds are found in special-education programs.

Finally, it is important in this section to say a word about gender. There is currently a lot of attention being paid to achievement gaps between boys and girls. It is clear that girls have made significant progress, and in most countries, their performance is now ahead of boys'. However, in general, the gender

gap is much smaller than the gaps in outcomes that are attributed to socioeconomic status, ethnicity, or disability. It remains true everywhere that there is much more difference in performance among boys and among girls than there is between boys and girls. Therefore, in view of other differences that have much stronger effects, giving too much attention to gender is a misplaced priority.

3. How Much Can Schools Do?

The relationship between these social factors and school outcomes has been known for a long time. And at least since the Coleman Report (done in the United States in the mid-1960s), there has been a vigorous debate about how much schools can actually do to overcome these differences. That debate continues, with some contending that schools are rather powerless in the face of social disadvantage and others claiming that schools can do a great deal to overcome social inequities. According to various estimates in the research literature, anywhere from 50 to 80 percent of the variance in student achievement is due to factors outside the school, and anywhere from 20 to 50 percent of the variance is explainable" (in statistical terms) by factors inside the school.

Still, a dispassionate reading of the evidence would suggest that while social conditions matter, so do schools. One of the enduring findings in research is that at any given level of school socioeconomic status, school performance varies greatly, often by as much as it varies across socioeconomic levels. (One of many examples illustrating this pattern, in this case from Australia, is shown in fig. 1.)

The same is true across countries: national education performance also varies among countries with similar socioeconomic conditions. In other words, it is possible to make improvements in performance, often substantial ones, at any given level of disadvantage. The PISA studies have played an important role here, showing that some countries are able to combine high levels of achievement with low levels of inequity. But many other studies at the national or local level showed the same pattern of highly differentiated school performance, even given similar social conditions.

Figure 1. Variation in school performance by socioeconomic status (Australia)

Regression of School Mean Literacy Score on Average School SES
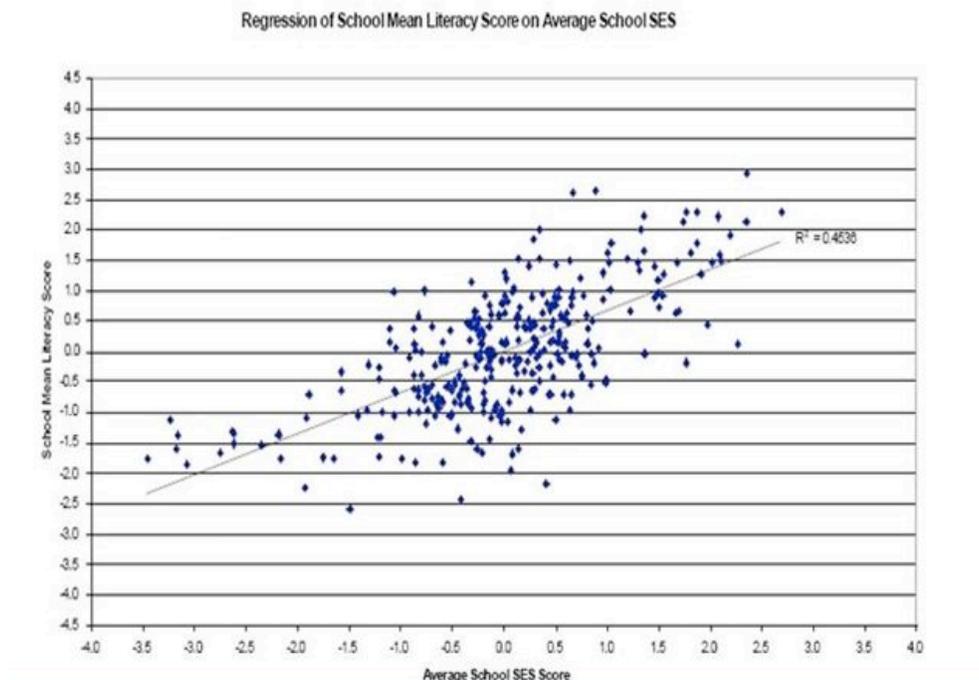
There is evidence from various sources that student outcomes can be improved across entire systems. Most of the high-performing countries of the last decade would have been in a far different situation twenty years earlier. This applies to Finland, but also to Korea and Singapore, which in the span of three or four decades went from having mass illiteracy to having very high levels of educational outcomes. China has moved from mass illiteracy to vastly improved outcomes in a few decades. More recently, countries such as Poland, Chile, and Portugal have shown significant improvement over two rounds of PISA (about six years). Ontario, Canada, produced significant improvements in all student outcomes—and teacher morale—over a period of six to eight years. But we must not underestimate the difficulty of producing this kind of change, or the degree of political support required to bring it about. In all these cases, it was not just schools that made the difference, but also a much larger political and social effort that was sustained over years, allowing schools to do the hard work of improvement.

And even with these successes, achievement gaps remain large in every setting. No school system has been successful in eradicating them, or even coming close to doing so. Moreover, schools that make rapid improvements in performance and equity are not always able to sustain those improvements. It is abundantly clear that the educational effects of social disadvantage remain very powerful.

In short, the reasonable position to take is neither too optimistic nor too pessimistic. The available evidence suggests that schools cannot singlehandedly overcome social disadvantage, but it also suggests that considerable improvement is possible in schools and in school systems.

4. Strategies to Address Disadvantage and Inequity

Strategies for improvement are at the heart of what this project is about. Schools and school systems around the world, including those in this study, have adopted many different strategies to try to address problems of disadvantage.

An increasing body of evidence is available internationally to guide decisions about policy and practice in education. We know more about good system design, about good leadership, about the factors that actually influence student achievement, and about many specific areas of teaching and learning. At the same time, we have much evidence that research does not always have its intended effect, and that policies and practices are sometimes adopted for reasons other than good evidence supporting them.

The choice of strategies is affected in part by people's notions about the causes of inequity. If disadvantage is seen as the result of poor choices by individuals, that leads to a very different set of ideas about policy than if disadvantage is seen primarily as the result of social factors operating outside personal control. In many countries this difference remains a matter of active political debate, with many believing that disadvantage is often the result of poor decision making or inadequate skills. In schools, there is the still widespread belief that differences in outcomes are largely the result of unalterable characteristics of students and their families, leading to approaches such as lower expectations and streamed programs.

Another general policy debate related to disadvantage has to do with the appropriate mix of targeted and universal programs. In many cases, efforts to address disadvantage are targeted at particular groups. This is often the case in schools. Another school of thought argues that the most effective policies are universal, applying to all schools and students, because they lack the stigma attached to targeted policies and enjoy stronger political support. An example of these two approaches in action might be a preschool program targeted at high-need families or communities versus a preschool program available to all children. In education, this debate is manifested when systems focus most of their attention on low-performing schools, whereas the evidence supports a strategy that involves all schools in improvement.

There is no universal typology of efforts to reduce achievement inequities in education. Improvement efforts can be thought of as taking place at any or all of four levels: instructional/classroom, school, regional, and national. Within each of these levels, there is also a wide range of possibilities, addressing such diverse elements as school and district planning, teacher selection, teacher training, teacher compensation and evaluation, teacher assignment, leadership development, curriculum content, course choices, tracking and streaming, pedagogical practices, assessment and accountability, choice and competition, outreach to parents and communities, student voice and engagement, innovation, technology use, supplementary or alternative programs and schools, and so on. Almost all of these approaches are used in at least one of the five systems in this study, suggesting how diverse efforts are. Indeed, there is not even a good "menu" from which school systems could make choices about appropriate strategies, although the Education Endowment Foundation in England (educationendowmentfoundation.org.uk) is one organization that is setting out to provide research-based advice on this question.

The evidence available does suggest that some of these strategies are likely to be more effective than others. The analytical approach in this report borrows heavily from previous work on large-scale system improvement (Levin 2008, 2012). In *How to Change 5,000 Schools,* it is argued that improvement is

primarily created through changing teaching and learning practices in all schools and classrooms. A growing body of evidence (e.g., Hattie 2009) supports the power of particular school and classroom practices to better outcomes. While often adopted, changes in other areas of education (such as governance, finance, accountability systems, teacher preparation, technology use, and school organization) may lack evidence of effectiveness and may actually prevent a focus on changes that do matter.

Nine suggested key areas of focus for improving teaching and learning (Levin 2008):

1. High expectations for all students

2. Strong personal connections between students and adults

3. Greater student engagement and motivation

4. A rich and engaging formal and informal curriculum

5. Effective teaching practices in all classrooms on a daily basis

6. Effective use of data and feedback by students and staff to improve learning

7. Early support with minimum disruption for students in need

8. Strong, positive relationships with parents

9. Effective engagement of the broader community

Four key supporting elements to help that work of improved teaching and learning to take place:

1. Engagement and commitment from the adults in the system

2. Effective collective processes for educators to continue to improve their practices (often referred to as professional learning communities)

3. Aligned, coherent, and supportive system policies and practices

4. Appropriate allocation of resources

This approach suggests that developing the appropriate focus on school practices requires attention to various supporting conditions and, notably, a strong effort to ensure that teachers and other education workers see themselves as active parts of the improvement process, rather than passive recipients of policies from elsewhere. At the same time, the supporting conditions should not be confused with the actual effective practices. So, for example, while professional learning communities of teachers would appear to be essential to the wider adoption of good practices, there is no guarantee at all that simply having learning communities will lead to the adoption of those practices. Similarly, money is essential to operating a good school system, but we have much evidence showing that simply adding incremental amounts of money does not necessarily lead to better results. It is the use of these conditions to support effective practice that is vital.

There are, of course, many other lists of improvement practices created by other authors. Most of these lists have a considerable amount of overlap. The key point we want to maintain in this discussion is the

primacy of focus on teaching and learning practice in every school. Increasing evidence (e.g., the powerful synthesis of meta-analyses by Hattie 2009) suggests that other kinds of changes have not had the promised or desired results.

This position is contentious. There are many people who continue to argue that effective school improvement rests on actions extrinsic to schools, such as more choice and competition, tougher accountability systems, or new ways of recruiting and paying teachers (Mehta, Schwartz, and Gamoran 2012). There is, in particular, a view of public services that focuses on accountability as the key driver of improvement; that the best driver of improvement is to measure results and provide positive and negative incentives for better performance.

Our view is that while some of those components may be necessary to support other changes, the evidence is quite clear that on their own they do not lead to real and sustained improvement in student outcomes. Moreover, we do have evidence from various jurisdictions that carefully targeted programs of improvement with a focus on actual school practices can show significant results in relatively short periods of time (Jensen et al. 2011; Fullan 2010; Stringfield, Levin, and MacKay, forthcoming).

In general, school systems have had extensive and rather diffuse reform agendas, rather than agendas that focus on a small number of key goals and strategies. There are many reasons for this, including political pressures to do things that are visible and appear to be quick, a lack of evidence on effective practices, and competing agendas of key individuals or stakeholders. But the result often is that reform programs resemble a collection of ideas rather than a coherent strategy. For those in the schools, frequent new reforms, coupled with the lack of a coherent and consistent approach, create enormous difficulties when it comes knowing how to focus their efforts.

A further issue is the balance between efforts in the school and out-of-school strategies. In general, school improvement efforts tend to give relatively little attention to outreach to parents and communities, focusing much more on what happens inside the school system. It is also the case that working with communities can take many forms, such as home outreach and parent support, trying to integrate various support services, or providing basic services such as health care, clothing, or supplies to needy students. The evidence on these various approaches is limited but does suggest that working more closely with parents and families, in particular, could generate good value for effort. At the least, it would seem desirable for improvement strategies to give explicit attention to the balance of efforts in the school and efforts in the community.

In terms of reducing inequities for particular groups of students, the available evidence, though not conclusive, suggests that a combination of generic and issue-specific strategies is needed. For the most part, good instructional strategies such as those listed above are good for all students, including those who are lagging behind or those from minority backgrounds. Holding high expectations, using data to monitor progress, finding ways of engaging students more fully, and using feedback more effectively are examples of practices that are suitable for all students.

However, particular kinds of strategies may also be required for particular kinds of issues. For example, there is a growing base of evidence on good practice for students whose first language is not the main language of the school. This good practice includes building on the students' native language skills, explicit teaching of important vocabulary, and so on. In addition, outreach to parents is especially

important for students learning a new language. Where second-language learners are numerous, organizational features, such as effective reception centers and appropriate testing of initial language ability, are also vital. School systems with significant minority-language populations need to ensure full adoption of these practices in settings where such populations exist.

Similarly, quite a bit has been learned in recent years about how to program for and teach students who are well behind in their reading skills. This has long been a vexing problem in junior high and high schools (lower and upper secondary), where teachers lack the expertise and schools lack systematic processes for helping such student catch up. This is another instance where there must be deliberate programming for such students; this work cannot be left to individual teachers or schools.

Then there are areas where research suggests that we should *not* be investing resources. Examples include the following:

- streaming, which has consistently been shown to lower overall achievement levels
- retention in grade and repetition of grades or courses, which is expensive and produces very bad outcomes
- too much focus on using new technologies, which has consumed not only considerable money, but also a great deal of time and energy, with no evident result in student outcomes

It is one thing to list changes in school practices and quite another to know how to bring about those changes in all or even most schools and classrooms. Even relatively simple changes in human behavior are extraordinarily difficult to implement consistently across large numbers of people, as shown by the challenge of getting all staff in hospitals to wash their hands consistently (Gawande 2007). Without careful and effective implementation, no strategy can achieve its purposes. Many education change efforts give insufficient attention and effort to the challenge of changing behavior among large numbers of people in large and complex organizations, although this has gradually been changing as the difficulties of improving practice and outcomes in large school systems—and the limitations of using policy measures alone in doing so—have become more apparent. Still, very few systems have developed the level of organization (of people and of processes) needed to support actual changes in behavior among many thousands of people.

A summarizing point to this discussion might be to emphasize the nature of schools and school systems as *systems*—that is, as sets of conditions or factors that interact with each other in complex ways. Systems have many interdependent elements. One cannot simply intervene at one point without considering various ramifications. At the same time, a series of unconnected interventions is highly unlikely to produce a desirable outcome. The system nature of education is also a reason to think about school improvement as having to take place at multiple levels—classroom, school, district—at the same time.

Having established this as a background, we now turn to a consideration of the five jurisdictions in this study.

CASES

1. Context

Below is a brief snapshot of the five participating organizations.

	Chicago (see Appendix A)	Denver (see Appendix B)	EdVisions (see Appendix C)	Seoul (see Appendix D)	Shanghai (see Appendix E)
Size	400K students, 670 schools	85K students, 200 schools	9K students, 45 schools	1.2M students, 2,185 schools	1.9M students, 2,875 schools
Governance	Board appointed by mayor	Elected school board	No central governance	Municipal elected officials	Appointed leadership
Organization	School district, board appointed by mayor but also charter schools	School district, elected board but also charter schools	Charter school network, schools affiliate voluntarily, no central governance	Municipality that also operates schools	Special city government that operates schools, many functions delegated to smaller areas
Key demographics	42% African American 44% Hispanic 9% white 16% ESL 85% FRL	15% African American 58% Hispanic 20% white 35% ESL 72% FRL	11% African American 5% Asian 9% Hispanic 68% white 44% FRL %ESL data not available	4,000 migrant students (0.03%), 50,000 low SES (5%)	50% of students are migrants from rural areas

Note: there is an obvious difference between the four city school systems and the EdVisions network, since the latter a) is dispersed geographically and b) does not have a central governing structure but instead is a set of independent schools that share values and resources.

These cities vary greatly on many dimensions. Although the four cities are all comparatively large, there is a scale difference between Denver (with 85,000 students) and Shanghai (with nearly two million students). Although it's a city, Shanghai as a school system actually has more students than all but a few states in the United States and has roughly the same enrollment as Ontario, Canada's largest province.

Each of the jurisdictions participating in this study had a very different social context and so faces different educational challenges. In the US cities and charter network, the main demographic challenges are around ethnicity. In all three jurisdictions, a majority of the students come from minority populations, although these ethnic differences are also correlated with issues of poverty and socioeconomic difference. In Denver, the majority of students (60 percent) are Hispanic, and that proportion is continuing to increase, while in Seoul and Shanghai, ethnic minority populations are very small, and the main challenges are around socioeconomic differences. But here too, the cities are not alike in that in Shanghai about 40 percent of the population and more than half of the students are children of migrants from rural areas, often with much lower levels of education, whereas this is not the case at all in Seoul.

Demographics are not the only way in which these cities vary. The political and cultural contexts are also quite different in many ways. For example, cultural attitudes toward education vary greatly. Although virtually all parents have high hopes for their children's education, in some communities these hopes manifest themselves much more actively. In China, and even more in Korea, competition among students and families leads to extensive private tutoring and after-school lessons—and to huge pressure on students, to the point that both systems are trying hard to reduce this element of competition.

The systems also vary in their stages of development. In China, for many years the focus was on simply having enough schools, and then enough secondary schools, for the country's entire population. This was itself a huge challenge for a country that had had relatively little public education until after its revolution in 1948. It is only in the last ten years or so that China has really been able to focus on issues of quality, with regional disparities in education levels now more similar to what would be found in richer countries. Korea too could be regarded as having a young public-education system, one that has made enormous strides over the last fifty years, moving from very low to very high average levels of education in the course of two generations. The United States, on the other hand, pioneered a mass high-quality system of public education but has struggled to maintain those features in the face of rapid demographic shifts and political conflicts over the role of government.

Another important difference lies in the political arrangements for governing education systems. Education in the United States is highly decentralized and operates through independent districts, most of which are governed by elected boards (though not Chicago, where the board is appointed by the mayor). Canada also has locally elected districts, though they are less autonomous than in the United States. Toronto is the largest such district in Canada. There is often conflict between local boards and provincial governments, which can get in the way of progress.

In Korea, education is jointly governed by the national and municipal governments, both of which are elected, but with the national government playing the key role; in China, there are separate structures for governing education at the municipal, provincial, and national levels, with each level largely but not entirely subordinate to the one above. Korea has given municipalities more control over some aspects of education, and local superintendents of schools are now elected, which has led to some conflict, including a very sharp recent disagreement between Seoul's elected superintendent and the national minister. Within the overall Seoul system, there are eleven districts, each of which has a degree of autonomy in its work, and each school of which has a local council composed of teachers and parents.

Similarly, given its size, the Shanghai city education authority has further delegated significant responsibilities to subunits within the city, many of which are themselves the size of large districts in other countries.

As in all political systems, the "official" description is never quite coincident with what actually happens, as there is a push-and-pull between various layers of any large and complex system. Most systems have more flexibility at the local level than is officially prescribed, but much depends on whether local people (at the school or district level) exercise that initiative.

In the case of EdVisions, the challenges of a highly decentralized system (indeed, it is not a "system" at all in the way that the cities are) are evident. All EdVisions schools with grant money are expected to adhere to the EdVisions Evaluation Plan and Design Essentials, a comprehensive plan for evaluating

student outcomes. But in practice, schools do this to varying degrees, assess progress in varying ways, and may or may not report data on progress regularly, making it difficult for the network as a whole to judge its status or progress. EdVisions is primarily about creating shared ideas, cultures, and ways of working.

A further element of governance involves the role of teachers and teachers' unions. These systems vary in how they recruit and develop staff, and they also vary in the extent to which teachers and their unions are able to shape policy and working conditions in schools. In Korea and in Chicago, teachers' unions are powerful, though in different ways: the latter has seen frequent conflict, including strikes, but Korean teachers have also been politically active. Korean teachers are also highly respected and enjoy job stability, high pay, positive working positions, and work in highly collaborative environments. In Denver the teachers' union has worked more closely with the district in accommodating some reforms. The Chinese system does not have independent teacher organizations that negotiate with government.

Those structures matter. The policies created by higher levels of government have powerful effects on the way these cities operate—take, for example, the No Child Left Behind legislation in the United States, the policies on equity in Canada, the policies curtailing school choice in Korea, or the efforts to support private schools while reducing disparities in achievement in China. In addition, much or most of the funding for all these systems comes from other levels of government, sometimes tied or connected to particular policies, further impacting local settings and priorities. In many respects, these systems have only limited ability to shape their own paths.

Political structures are also shaped by political beliefs. For example, the individualism that has always marked US history and politics has shown itself recently in the development of school-choice systems and charter schools, which play important roles in Denver, Chicago, and the EdVisions network. However, choice also operates to a significant degree in the other settings, because competition among parents for the best possible education for their children appears to be universal. Each city has a significant proportion of charter or private schools with significant public support, especially among elite groups. Each jurisdiction has to struggle with how to combine elements of school choice and competition with efforts to promote equity of outcomes, but in each setting this remains a topic of contention. For example, proposals to restrict school choice were a major source of conflict recently in Seoul, and Korea has struggled for years with ways of reducing the excessive reliance on after-school "cram" programs. Korea currently restricts the ability of private schools to select students and also controls the fees they can charge. Shanghai was one of the first places in China to move away from the elite "key school" concept and toward an effort to improve quality in all schools, but still has a significant private-education sector.

Another element that varies among GCEN participants and that is highly relevant to the state of education has to do with services and support for families outside the school system. These include such matters as early childhood education and care, before- and after-school programs, and services for young people (such as health care), but even more broadly, they include access to reasonable housing and employment. Every educator knows that these services have a large impact on children's readiness for schooling and on parents' ability to support their children's success at school. These services and conditions vary widely across the GCEN countries but may also vary greatly within each city, from one neighborhood to another. The United States has generally weak programs for young children, and Canada's are not strong either. Korea has provision for three- and four-year-olds but fewer than half participate and the level of spending

is low, which may affect quality and increase disadvantage. However, the national government has now committed to significant increases in this area, including larger subsidies for poor families.

That point raises yet another important consideration for urban school systems: the degree to which disadvantage or minority status is concentrated in some neighborhoods, and the degree of inequality between neighborhoods. In Canada, the United States, China, and Korea, inequality in family incomes has been rising in recent years, making the work of schools more difficult. In China, concerns about inequality and corruption are important issues. Korea has made rapid improvements in income equality and in 2009 reached the Organisation for Economic Co-operation and Development (OECD) average. Meanwhile, relative poverty (the share of the population living on less than half of the median income) rose to 15 percent in 2008, the seventh highest in the OECD area. These shifts will undoubtedly work against equity in educational outcomes in all the systems.

Finally, it is important to recognize the very different accountability systems and requirements that affect improvement efforts. In Shanghai and Seoul, the traditional outcome measure has been examination results at the end of high school, with few measures in earlier years. Moreover, those measures were seen as reflecting student capacities, not school quality. It is only recently that these systems have begun to pay attention to assessing school quality; also, Korea has now introduced testing of all students in earlier grades. In the United States, on the other hand, testing of students at many points has long been a feature of schooling, and at least for the last decade (and in many cases much longer), student outcomes have been used to make judgments about school quality; more recently, student outcomes have started to become considered a sound basis for judging the work of individual teachers.

A substantial discussion of the important issues around accountability is beyond the scope of this paper. It can be said, though, that accountability is a double-edged sword. It is necessary to have data about performance in order to improve, and fuller data potentially allows more nuanced analysis and planning for improvement. There can be little doubt that improvements in data systems about student performance have helped improvement efforts in many places. On the other hand, there is much evidence that people will try to improve their performance on such key outcomes through any means they can, including selection of students, narrowing the focus of classroom practice, and, in a disturbing number of cases, outright cheating. This is especially the case where teachers do not see the accountability measures as fair or reasonable. And there is considerable evidence that overemphasis on narrow measures of accountability can distort what schools do and can demotivate educators. The most effective systems appear to have a moderate approach to assessing outcomes, and, most importantly, to use that information to support improvement, rather than punishing what is seen as poor performance (just as the most effective teaching uses feedback to stimulate intrinsic motivation, rather than punishing students).

All these differences in context and in practice mean that one has to be very cautious in interpreting across the cases. What works in one setting may not work in another for all kinds of reasons. There should be no simple transfer of practice or policy in such diverse settings. Of course this does not mean systems cannot learn from each other; the choices that each system has made about its policies and strategies can provide clues and signposts for others as to how they should organize themselves in their own settings.

2. Educational Challenges

Each of these systems is strongly focused on trying to improve overall outcomes and to reduce disparities in achievement related to demographic factors, such as migrancy or ethnicity. However, in some cases the disparities are much smaller than in others, and the sociodemographic factors associated with these differences also vary greatly. Given the framework developed earlier, this analysis suggests that strategies would also need to differ significantly.

Chicago

Starting in the 1960s, Chicago—like other large US cities—saw many white and middle-class students leave its public school system. Today, Chicago public schools are about 90 percent minority students, primarily Hispanic and African American, with the proportion of Hispanics increasing steadily in recent years. More than 85 percent of Chicago students are from poor families, and 85 percent of elementary students rely on the free-lunch program.

Education outcomes in Chicago have been challenging for a long time, mirroring those in many other large US cities. Neither elementary-school reading and mathematics nor high-school graduation rates are at levels that would be considered satisfactory. As one report put it, "The vast majority of CPS [Chicago Public Schools] students have academic achievement levels that are far below state standards and requirements for college entrance" (Luupescu et al., 2011). Gains in achievement in the last decade were less than those in other large cities, according to National Assessment of Educational Progress (NAEP) data. Chicago also has major differences in outcomes between African American, Hispanic, and white students. Chicago has been subject to several very significant change efforts in the last twenty years. Over that time, while some outcome indicators have gradually been improving, outcome levels are still unsatisfactory. Reading levels have not changed very much in many years, and some gaps in achievement among ethnic groups have increased over that time.

Denver

Student demography in Denver has been changing rapidly, with very large increases in the Hispanic population as a result of immigration, primarily from Mexico. These children and families are also likely to be poor and to have limited, if any, proficiency in English. Many immigrant parents also have very low levels of formal education, given that the median level of educational attainment in Mexico is only 7.2 years.

Despite these changes, achievement levels in Denver have increased steadily over the past several years. Denver has improved more rapidly than most other districts in its state of Colorado and is now among the better performing urban/high-poverty districts. For example, the median growth percentile (an indicator used in Denver to show average progress in a school or population group) in reading and math has gone from the mid-40s to nearly 60 since 2005, with progress especially strong in middle schools. High-school graduation has increased as well. However, despite these improvements, only about 50 percent of students are proficient in the state's reading measures, about 40 percent of students are proficient in mathematics and writing, and only half of all students graduate from high school in four years. Achievement gaps between ethnic groups and based on poverty indicators also remain very large. For example, white students are twice as likely to be reading well, as are African American students.

EdVisions

This network of relatively small charter schools is predominantly white, but three of its schools include a significant number of Hispanic students who are poor or have English as a second language. Across the network, approximately half of the students are at least one to two years behind in either reading or math, or both. EdVisions schools report higher than state-average levels of special-needs students and students relying on free- and reduced-lunch programs.

A central focus of the work of all schools is preparing students for success on state achievement tests. However, EdVisions also tries to avoid an excessive focus on test scores, adopting a broader view of student achievement and welfare that promotes engagement and self-directed learning by measuring student attributes such as autonomy, belongingness, motivation, and problem-solving skills.

Seoul

The city of Seoul does not have independent information on achievement levels and gaps, and relies on Korean national data. As a country, Korea has some of the best levels of student attainment internationally and, according to PISA, one of the smallest levels of disparity between high- and low-performing students. Korea's main concerns are not so much around levels of achievement but around making education more satisfying, engaging, and stimulating for students, and trying to move away from a culture very oriented toward exam results and with a huge emphasis on studying outside of school hours. For example, a poll in a major newspaper found that although students and teachers are optimistic about how education is contributing to the country, students are highly disengaged and parents were also highly critical of schooling. In light of these issues, educational policies are currently focusing more on competence and creativity, rather than simply knowledge regurgitation.

Additional challenges for low SES students include the importance placed on learning English language skills, the proliferation of shadow schooling/private tutoring (called *hagwon*), and the increase in students studying abroad. These are opportunities that are not as available to low SES students. Korea also has streamed secondary schools, which does not provide good opportunities for many students.

Shanghai

Achievement levels in Shanghai, based on PISA, appear to be very high—indeed, the highest in the world on the 2009 test. Challenges can be thought of as having three aspects: first, a disparity in school quality between urban and suburban areas within the larger Shanghai region; second, a disparity in educational conditions between native Shanghai students and recent migrant students as a result of the dramatic increase in migrant workers in Shanghai; and third, variance between schools caused by historical traditions and the professional quality of principals and teachers. The existence of elite schools (also called "key schools"), which select top students, as well as the development of a substantial private school sector that charges fees, has led to greater segregation of students based on achievement and, often, background.

China, like Korea, is also challenged by the fact that its system is very focused on preparation for and achievement in a single examination at the end of secondary education. These exams have powerful effects on students' futures, as they control admission to postsecondary education. Their importance leads to a system in which there is a huge focus on exam results, and it is difficult to address other educational needs, to broaden the scope of schooling beyond traditional academics, or to reduce the amount of out-of-school studying and tutoring.

3. Strategies

The choice of strategies to address improvement can be shaped by various factors. In some cases pressures come from more senior levels of government, which either promote or require particular strategies. As noted earlier, these cities control only some aspects of their own setting. On the other hand, each system also has some degree of internal decentralization that gives choices to other levels of the system. This is not a bad thing. Education systems are complex, and it is clear, as mentioned earlier, that improvement requires action and commitment at several levels. The challenge is to balance appropriate degrees of decentralization with clarity about overall strategy, alignment of actions, and the roles of all the parties.

Other choices of policies and strategies may be shaped by the ideological commitments of key leaders (for example, an a priori belief in competition or accountability as key levers), state or national policy, the availability of resources and funding, and public acceptability. For all these reasons, it is difficult and relatively rare for education systems to have carefully articulated improvement strategies linked to a well-described theory of action.

Strategies can also have both policy and practice dimensions. That is, a strategy can focus on setting policy, such as accountability or competition, or it can be about changing practice, such as adopting particular instructional approaches. Changing policy, while not easy, is significantly easier than changing the practice of many people in large systems, but a change in policy may not yield the proposed changes in practice.

Chicago

The Chicago Consortium on School Reform has been a long-standing partner to the city, providing independent analysis and evaluation of many of its strategies and programs. It is hard to summarize a large and complex body of research, but in general there has been improvement in Chicago outcomes, though they still remain low by national and even urban standards.

Since the 1980s Chicago has gone through three major waves of reform. The first was massive decentralization, which led to significant improvement in about one-third of elementary schools but had little impact on high schools. In the 1990s the system moved to mayoral control and a more centralized approach; more recently, the system embraced charter schools and school reconstitution. Mayoral control allows for the appointment of the board of trustees, the Chicago Public Schools (CPS) chief executive officer, and all senior appointments in the CPS. Chicago today has a mix of central direction and local school authority but still gives considerable autonomy to school communities to select principals, and to principals to hire school staff. Chicago has also had ongoing struggles over funding, with periodic crises over its inability to keep its schools open and, partly as a result, difficult relations with its teachers' union.

Since 1997, CPS has also initiated five distinct reforms that aim to dramatically improve low-performing schools in a short time. On average these various interventions led to gradual but significant improvements in elementary schools, but less so in secondary schools. A recent study of reconstituted schools found that they did not improve more rapidly than other, similar schools. An earlier study of a policy that prohibited social promotion also found no positive impact on student outcomes. These studies are valuable in helping systems learn which initiatives are most likely to have positive effects, and where

good practices may run counter to public opinion (such as the public belief, despite much evidence, that retaining students in grade is a good policy choice).

Like other systems in the United States, Chicago has been deeply affected over the last ten years by the provisions of No Child Left Behind and is now trying to adjust to the impact of the Common Core curriculum standards and assessments. Recent Chicago documents indicate an intention to focus more on instructional strategies in schools, while giving a central role to principals in leading school improvement. Accountability measures based on student performance will continue to play a key role in shaping personnel and resource decisions in relation to individual schools. The district will also continue to use a mix of charter and other independent schools to try to create incentives to improve student outcomes. Chicago has also tried to build and improve links with local communities and social services to make better use of external supports for students, in addition to improving pre-school education and services for young people outside of the regular school day. The district manages the country's largest community schools system, called the Community Schools Initiative (CSI).

Denver

Denver Public Schools (DPS) understands that their greatest challenge lies in supporting the educational needs of a high-poverty, linguistically diverse student population. The district's theory of action is to combine best practices in centrally managed instruction with performance empowerment for schools, with the goal of accelerating academic achievement. The district centrally manages core elements of the instructional model, the key components of which are a baseline core curriculum, coordinated professional development, and interim formative assessment. Balancing the benefits of a Common Core curriculum and centralized support for instruction, with the flexibility to differentiate both instruction and professional development, is key to their theory. The DPS has three pillars of performance empowerment: capacity, autonomy, and accountability. Capacity refers to the existence of the skills, leadership, and resources necessary for schools to succeed. Autonomy empowers individuals and schools with demonstrated capacity to direct resources and skills in a manner to drive optimal results. DPS promotes autonomy for schools in the areas of people, time, and money. Through accountability, the district holds schools and individuals responsible for results through rewards, interventions, and consequences. In 2008, DPS developed and implemented the School Performance Framework (SPF), a comprehensive tool for measuring school performance.

The 2010 Denver Plan is a strategic action plan that is classroom focused—on students, teachers, and content. Recognizing that the strongest impact on student progress is highly effective educators in the classroom, the plan calls for increased teacher and principal development. Other features of the plan include deepening family engagement in schools, increasing stakeholder ownership, and increasing community partnerships.

The district identifies four priority areas for its work in the instructional core: helping educators grow (e.g., frameworks, coaching, feedback, and professional development of various kinds), shifting teaching practice (e.g., Common Core standards, culturally relevant curricula, assessment practice, instructional strategies), improving outcomes for linguistically diverse students, and differentiating support to schools (e.g., more sharing of best practices, improving school climate and discipline practices, implementing a strategic school support framework, improving extracurricular activities). A variety of initiatives is supported under each of these headings.

DPS also partners with various institutions of higher education, including a research collaboration with the University of Colorado at Denver (UCD) School of Education and Human Development (SEHD) to determine school-wide practices that support the achievement of English language learners (ELLs; University of Colorado, Denver, 2011). Stanford University's Center for Educational Policy Analysis and DPS have also established a research collaboration focusing on principal effectiveness, and DPS is a "strategic data partner" with Harvard University.

One study that looked at schools that had more success with ELLs found attributes that are highly consistent with the broader literature on effective schools—namely that these schools "have developed a coherent approach to educating students, and display high expectations for students and staff, supported by a culture of engagement and instruction geared toward making the content accessible to students … by integrat[ing] ELA services and the 'language lens' into the overall school culture and classroom instruction, rather than a particular program or series of programs."

EdVisions

The EdVisions network is not a system in which schools are controlled or governed centrally, but a network of schools with a shared view on learning. Schools in the network are independent, so each school determines its own approach, but membership in the network implies acceptance of a common general approach. EdVisions believes strongly in the correlation between hope and achievement; therefore, it works to build students' sense of capacity and possibility. The emphasis on hope and student engagement guides the EdVisions approach to supporting student achievement, which supports student-centered teaching and learning and attempts to build a long-term love of learning.

EdVisions supports the "Seven Attributes of Effective Schools" (common focus, high expectations, respect and responsibility, time to collaborate, technology as a tool, performance based, and active inquiry) as advanced by the Gates Foundation. The EdVisions system uses an advisory, data-driven approach with an emphasis on a project-based Personal Learning Plans (PLPs) to support teaching and learning. At the classroom level, teachers develop PLPs that support individual student needs while encouraging all students' autonomy, interests, and problem-solving abilities, as well as student–teacher cogeneration of curricula.

Teacher autonomy and development are key aspects of the approach. Within the network each site is responsible for its own staffing, and teachers are referred to as teacher-leaders. Teachers' knowledge about student achievement informs decisions about resource allocation, programs, and personnel. Professional development is available to help teachers implement the EdVisions Design Essentials, a program for instilling hope and engagement in the classroom curriculum. Staff at new sites are immersed in successful existing sites through week-long summer institutes. EdVisions provides teachers with a three-year coaching cycle and offers resources, print materials, webinars, and conferences.

Parent involvement is another important aspect of the network; EdVisions schools are intended to be parent-friendly, with substantial parent participation and volunteering, as well as involvement of community, civil groups, and business networks. Students also work with local colleges and universities to discuss potential programs, project ideas, and resources.

The network uses "Hope Surveys" to measure levels of student autonomy, belongingness, mastery goal orientation, academic press, engagement, and hope and then correlates these measures with student

outcome measures. A major issue for EdVisions schools is the inconsistency between its approach and many state or national mandates that push schools to work in very different ways.

Shanghai

Shanghai has had a multifaceted, broad strategy for addressing improvement issues in the last few years, for migrant students and for students generally. Many of these efforts have tried to broaden the focus of schooling so that it is less based on rote learning, less focused on exam preparation, and more focused on deeper student engagement.

Some of the main components include the following:

- Efforts to ensure that all children of migrant workers are attending school. Some five hundred thousand such students were added to the system in recent years through both government and private schools. Additional resources were provided to rural schools in the Shanghai region and to schools with many migrant children, and teachers seen as highly effective were transferred to these schools.

- A range of efforts to improve teaching practice, including school-based teaching study at all levels, teachers observing each other's teaching, extensive professional development, and an online bank of curriculum and teaching resources. Teachers now have a minimum expectation for ongoing professional development, much of it school-based.

- A focus on "struggling" schools. One part of this was a program in which ten "good" urban schools and some educational intermediary agencies were asked to oversee twenty schools in rural districts, with the stronger schools sending senior administrators and experienced teachers to the weaker schools so that they could work together on improvement. Additional funds were also allocated to poor and rural schools to improve facilities and staffing.

- Curriculum changes to reduce the focus on traditional memorization and exam performance. These changes have taken many forms, including support for more activity-based teaching, more optional courses for students, new curricula that have a stronger focus on student interests, opportunities for schools to adapt or modify curricula, and research and professional development for teachers on new ways of teaching that result in higher levels of student engagement. Schools have developed partnerships with cultural institutions such as museums, and limits have also been placed on the amount of homework assigned to students. Effectively implementing these changes over such a large system remains a significant challenge.

Shanghai, like other cities, has struggled with the fact that many parents desire exclusive schools for their children. Key schools, in which students are enrolled based on ability, were eliminated in Shanghai in 1994, but there is still significant pressure for school enrollment to be based on parental choice as opposed to area of residence.

Seoul

Despite high levels of performance, Korea has taken quite a few steps recently to try to improve its schools and in particular to reduce the rigid and exam-focused character of the system. Several efforts have been made, without great success, to reduce the prevalence of *hagwon,* or cram schools. The

government has tried to reduce the pressure on school choice and competition by focusing on improving all schools and providing more options, but this remains a point of tension, with significant public and political pressure to maintain parental choice of schools. It has also attempted to focus more on communication skills to mitigate students' traditional fear of being wrong. Seoul has developed curriculum innovations within schools to encourage creative expression and teamwork, such as more teacher–student discussions and peer collaboration to foster cooperation and creativity. In addition, student assessment is now based more on creative thinking processes instead of memorization.

In the last few years, Korea has supported low-achieving schools through a couple of programs. Schools with 5 percent or more students who are below national academic achievement standards are designated as Achievement Improvement Target Schools. As of 2012, twenty-seven schools in Seoul were so designated. These schools are provided with funds for programs specifically targeting academically vulnerable students and are given more autonomy in curriculum. The school boards of these schools can reject an assigned principal and instead hire one themselves. A principal of a target school may choose up to 20 percent of the teachers, and teachers in these schools are given incentives, such as extra credit for their promotions.

Schools provide low-achieving students with afterschool programs, counseling, and mentoring. They hire extracurricular teachers to provide supplementary classes, and students from nearby colleges act as mentors for vulnerable students. Schools may also provide a home-visiting teacher for students who do not wish to reveal their academic status to their peers.

Another initiative is the Educational Welfare Investment Priority School project; 353 schools in Seoul are designated in this project and receive additional funds. Modeled on similar programs in England and France, the project addresses educational inequality caused by socioeconomic factors. Students are given access to supplementary education, psychotherapy programs, cultural programs, and health education. The most distinctive strategy in this project is to work with various community organizations to build an integrative support system for economically vulnerable students, using a combination of household, school, and community. Educational and Welfare Support Centers in eighteen communities help schools identify and allocate resources for vulnerable students. Research has demonstrated the project's positive effect on student attendance but has shown mixed results in academic achievement.

Korea's education success has much to do with the way it approaches teaching. Teaching is a selective occupation with good pay and good social status. One of Korea's strategies for addressing inequities is incentives for excellent teachers to work in high-need schools. These incentives include additional salary, smaller class sizes, less instruction time, and additional credit toward future promotion to administrative positions. As a result, low SES students in Korea are more likely than high SES students to be taught by high-quality teachers. Another effort is to increase school autonomy as part of an effort to address the needs of low SES students in their own communities.

Cross-System Observations
Looking across these systems and the strategies they describe, a few observations can be made. We do not have enough information to offer a reasonable critique of any of the systems individually; doing so would require a much stronger base of evidence than exists so far for this study.

First, all the systems are fully aware of the challenges they face around equitable outcomes, and all are struggling to take steps to improve outcomes and reduce inequities. These are serious, high-priority commitments for district leaders. However, they also face countervailing pressures, for example, exam and accountability systems, public desire for selective schooling, and competition for limited resources.

Second, most systems are attempting a range of strategies involving many different aspects of the system, such as accountability, resource allocation, professional development, and leadership development. Indeed, the brief descriptions here do not capture all the different initiatives the systems described to us, and those descriptions may not capture everything that is happening. As suggested earlier, there are powerful reasons why systems may adopt a considerable variety of initiatives and strategies. However, the result may be a difficulty in focusing enough attention on a few key changes, and a lack of clarity among various participants as to which goals and strategies are most important.

Third, quite a bit of evidence suggests that improvement comes primarily from a focus on classroom practice and the school conditions that support good practice. All of the systems are making efforts in this direction, but in some systems, a great deal of focus still seems to go to structural approaches, such as competition or accountability systems. In other cases the systems are providing additional funds to schools, but it is not clear whether schools have a clear sense of how to use those funds to their best advantage. A recent analysis of additional funding (through the Education Endowment Foundation) for high-poverty schools in England showed that quite a bit of this money is being used to support strategies with low evidence of effectiveness, such as class-size reductions and adding paraprofessionals.

Improving instruction requires specificity about good practices, such as a focus on effective feedback, productive group work by students, clear communication of tasks and success criteria, and so on. Yet much education reform, even when intended to address teaching and learning, does not delve into such specificity of practice. Creating learning communities of teachers, or expanding professional development, is only useful if that work is linked to practices that show evidence of effectiveness. In education in general, there seems to be considerable reluctance to talk about teaching practice (and again, the school organizational practices that support good teaching) in very specific terms, or to treat teaching as a skill that can be studied and learned, making teaching different from other professions.

Fourth, changing teaching practice in this way is a major undertaking, since it requires changing complex behaviors in large numbers of people. It is not clear from the descriptions whether the systems in this paper have the capacity to improve practice across large numbers of schools, but many cases in the research suggest that this is a common problem.

Fifth is the question of how schools work with the community outside the school. All of the systems in this study are making efforts to reach out and engage communities in various ways, though whether these efforts are sufficiently or appropriately focused on the most effective strategies is a question that remains pertinent.

4. Conclusions, Implications, and Questions

Trying to pinpoint some common issues and threads among these diverse systems has been a thought-provoking exercise. The final section of this paper poses six issues or questions that participants at the

Seattle symposium might consider, both in relation to their own systems and for mutual learning about effective practice across systems.

1. To what extent does each system have an articulated overall strategy for system improvement and for reducing achievement disparities? While each is involved in many initiatives aimed at better outcomes for students, it is less clear that the systems have an overt and clearly stated "theory of action" that lays out a) perspectives on the causes of and barriers to improved achievement, b) the rationale for selecting certain approaches over others as the basis for improvement, and c) the way in which various efforts are intended to contribute to better results for students. While a theoretical exposition of this kind does nothing in itself to help any student improve, in its absence there is a real risk of devoting time and attention to less effective actions, creating a set of activities that are mutually inconsistent, or losing clarity across the system about what the key strategies are.

   - Does the system have a clearly stated plan with a small number of priorities linked to specific actions and resources?

   - Is there a clear link between the priorities and actions and a view of the causes of lower achievement?

2. The strategies in use even in these five systems are highly varied. Some focus on structures, such as school competition. Some focus on accountability, such as "failing schools" policies. Others focus on teacher assignment, or on leadership, or on additional funding, or on development of teaching skills. In most of the systems, approaches that focus on working with parents or on broader community engagement appear to be minimal. As suggested above, the link between strategies and overall theories of improvement is not always explicit, but it would be useful for districts to discuss with each other the basis on which they have selected their current mix of approaches, and to compare their suite of approaches with other suites. Indeed, even thinking about a set of programs or strategies as a "set" might be useful for districts.

   - How many strategies are currently in place in each system?

   - Are these strategies mutually consistent? How do schools and the system deal with prioritizing among them?

3. How can districts best balance an overall focus and strategy with an appropriate degree of decentralization and autonomy for schools or groups of schools? All of these districts are struggling with this question in various ways. The evidence would suggest that systems require a coherent focus and set of goals but also an opportunity to find ways of carrying these out that work under local conditions. This is an easy thing to write down but a very difficult thing to do. Each system has approached it in different ways, so there is an opportunity here for mutual learning.

   - Which functions or activities are held in each system at the system level? What aspects are delegated to schools? Are their constraints on this delegation, and if so, are they clear? How much can individual schools vary from the district's overall plan?

4. How are improvement strategies connected to research evidence? Given limited resources, systems should invest in those areas that are likely to yield the most return for the least effort. That requires a strong connection between policy and practice and the available research, which in turn requires systems and structures that do not always exist in education systems. This project asks districts to work with external researchers; it would appear that such relationships on an ongoing basis are fairly unusual. Yet in a world of increasing knowledge about effective (and ineffective) policies and practices in education, a strong connection to the best available evidence would seem to offer potential to assist in making better choices. How can districts ensure that their efforts are strongly grounded in evidence?

Good use of evidence also has the potential to help reduce undesirable political pressures on systems. While research will rarely overcome strong political positions, a good base of evidence does provide some counterweight to demands to drive systems in particular directions that are contrary to students' best interests. However, few school systems anywhere have a strong infrastructure to find, assess, share, and apply the best current evidence.

- How do districts review relevant research and link it to policy proposals and to implementation plans? Is research evidence made widely available within the district to staff and community? If so, how?

- What links do districts have with external researchers who can provide independent expertise on their work?

5. What measures are being used to judge progress? Measures are important, because they have a powerful effect on public impressions of the schools and on educator morale. Misleading outcome measures can have seriously harmful effects.

For the most part, districts are using standard academic outcome measures, such as national or international test or examination results, even as they recognize that these do not capture all of the important outcomes of education. In some cases the measures are set through state or national policy, but districts would benefit from thinking about other measures they might report in areas such as student engagement, and how the use of additional measures could contribute to a more informed and fuller dialogue on progress and next steps. This could be especially relevant in the Asian cities, where exam outcomes are already so dominant.

Another issue related to measurement is achievement level vs. gain or value added. Both kinds of measures have limitations, but as is usually the case with measures, having more of them reduces the importance of the error intrinsic to each. In general, the question of how to assess progress appears to require more attention.

- What measures is each district using to judge progress? What are the strengths and limitations of each measure?

- What other measures could be adopted that would assist in achieving broader understanding of system goals and progress?

6. One of the clearest findings in education research—and in public policy—is that there can be a big gap between policy and implementation, and there can often be inadequate infrastructure (people, processes) to support serious implementation across an entire district. How is the implementation of improvement organized and supported in these cities? What approaches are being used to build the capacity of teachers, principals, and others in the priority areas? How are districts trying to make sure that appropriate changes are occurring in every designated school? And how are feedback loops constructed so that there is learning from implementation, leading to appropriate changes in policy?

- What is the implementation strategy in each system? What supports are in place to assist and monitor implementation in every school?

- What is the process through which the systems learn about changes that may have to be made in policies to achieve system goals?

There are no "right" answers to these questions and issues, though there surely are better and worse options among the choices available. The purpose of this paper is to stimulate discussion and suggest new or modified directions that could help the jurisdictions achieve their goals.

REFERENCES

Fullan, M. 2010. *All Systems Go*. Thousand Oaks, CA: Corwin.

Gawande, A. 2007. *Better.* London: Picador.

Hattie, J. 2009. *Visible Learning: A Synthesis of over 800 Meta-Analyses Relating to Achievement.* New York: Routledge.

Jensen, B., A. Hunter, J. Sonnemann, and T. Burns. 2011. *Lessons from High-Performing Systems in East Asia.* Melbourne: Grattan Institute.

Levin, B. 2008. *How to Change 5,000 Schools*. Cambridge, MA: Harvard Education Press.

Levin, B. 2012. *System-Wide Change in Education.* Paris: International Institute for Education Planning and International Academy of Education.

Luppescu, S., E. Allensworth, P. Moore, M. de la Torre, J. Murphy, and S. Jagesic. 2011. *Trends in Chicago's Schools across Three Eras of Reform: Full Report*. Retrieved November 2, 2012, from http://ccsr.uchicago.edu/sites/default/files/publications/Trends_CPS_Full_Report.pdf.

Mehta, J., R. Schwartz, and A. Gamoran, eds. 2012. *The Futures of School Reform.* Cambridge, MA: Harvard Education Press.

Stringfield, S., B. Levin, and S. MacKay. Forthcoming. "Educational Effectiveness Research, System Reconstruction and Change." In *International Handbook of Educational Effectiveness,* edited by C. Chapman et al. London: Routledge.

University of Colorado, Denver. 2011. "CU Denver – DPS Collaborative." Retrieved November 12, 2012 from http://www.ucdenver.edu/academics/colleges/SchoolOfEducation/FacultyandResearch/Projects/Pages/CU-Denver-DPS-Collaborative.aspx.

Wilkinson, R., and K. Pickett. 2009. *The Spirit Level: Why Equality Is Better for Everyone*. London: Penguin Books.

SOURCES (BACKGROUND MATERIAL ON THE SYSTEMS)

Bryk, A., P. B. Sebring, E. Allensworth, S. Luppescu, and J. Easton. 2010. *Organizing Schools for Improvement: Lessons from Chicago.* University of Chicago Press. Retrieved November 2, 2012, from http://www.cps.edu/SchoolData/Pages/SchoolData.aspx.

Byun, S. Y., K. K. Kim, and H. Park. 2012. "School Choice and Educational Inequality in South Korea." *Journal of School Choice: Research, Theory and Reform* 6 (2).

Chicago Board of Education. 2012. Retrieved November 12, 2012, from http://www.cpsboe.org/about.

Chicago Public Schools. 2011. "School Data: Racial Ethnic Survey." Retrieved October 19, 2012, from http://www.cps.edu/SchoolData/Pages/SchoolData.aspx.

———. 2012. "Community Schools Initiative." Retrieved November 12, 2012, from http://www.cps.edu/Programs/DistrictInitiatives/Pages/CommunitySchoolsInitiative.aspx.

———. 2012. "District Initiatives." Retrieved November 12, 2012, from http://www.cps.edu/PROGRAMS/DISTRICTINITIATIVES/Pages/Districtinitiatives.aspx.

———. 2012. "Instructional Strategy." http://www.cps.edu/Programs/DistrictInstructionStrategy/Pages/Districtinstructionstrategy.asp.

Christensen, G. and P. Stanat. 2007. "Language Policies and Practices for Helping Immigrants and Second-Generation Students Succeed." MPI-Bertelsmann Stiftung. The Transatlantic Task Force on Immigration and Integration.

Colorado Department of Education. 2012. "CDE: Improving Academic Achievement." Retrieved November 12, 2012, from http://www.cde.state.co.us/assessment/CoAssess-About.asp.

———. n.d. *Colorado Growth Model*. Retrieved November 12, 2012, from http://www.schoolview.org/GMFAQ.asp#Q29.

Consortium on Chicago School Research. 2012. "About" page. Retrieved November 12, 2012, from http://ccsr.uchicago.edu/about.

de la Torre, M., E. Allensworth, S. Jagesic, J. Sebastian, and M. Salmonowicz. 2012. *Turning Around Low-Performing Schools in Chicago*. Consortium on Chicago School Research. Retrieved November 12, 2012, from http://ccsr.uchicago.edu/sites/default/files/publications/12CCSRTurnAround-3.pdf.

Denver Public Schools. 2005. "Denver School Improvement Plan." Retrieved November 29, 2012, from http://www.dpsk12.org/pdf/improve_plan_05.pdf.

———. 2012. "Newsroom and Announcements." Retrieved November 8, 2012, from http://communications.dpsk12.org/announcements/denver-public-schools-is-fastest-growing-urban-school-district-in-the-u-s-.

———. 2012. "Office of School Reform and Innovation." Retrieved November 18, 2012, from http://osri.dpsk12.org/portfolio.

Ding, G., ed. 2010. *Investigation and Policy Analysis of Professional Development of Primary and Secondary School Teachers in China*. Shanghai: East China Normal University Press.

DPS-UCD Research Collaborative. April 2011. *DPS Exemplary Schools Case Studies: Cross-Case Analysis*. Retrieved October 12, 2012 from http://www.ucdenver.edu/academics/colleges/SchoolOfEducation/FacultyandResearch/Projects/Documents/Cross-CaseAnalysisReport.pdf.

EdVisions Schools. 2012. Home page. Retrieved November 12, 2012, from http://www.edvisions.com/default.asp.

Hannum, Emily C., Hyunjoon Park, and Yuko Goto Butler, eds. 2010. "Editors' introduction: Emerging Issues for Educational Research in East Asia." *Globalization, Changing Demographics, and Educational Challenges in East Asia*. Bingley, UK: Emerald Group Publishing Limited.

Lee, C. J., H. Lee, and H. M. Jang. 2010. "The History of Policy Responses to Shadow Education in South Korea: Implications for the Next Cycle of Policy Responses." *Asia Pacific Educational Review* 11: 97–108.

Luppescu, S., E. Allensworth, P. Moore, M. de la Torre, J. Murphy, and S. Jagesic. 2011. *Trends in Chicago's Schools across Three Eras of Reform: Full Report*. Retrieved November 2, 2012, from http://ccsr.uchicago.edu/sites/default/files/publications/Trends_CPS_Full_Report.pdf.

OECD. 2010. Chapter 4: Shanghai and Hong Kong: Two Distinct Examples of Education Reform in China, in "Strong Performers and Successful Reformers in Education: Lessons from PISA for the United States."

OECD. June 2011. "A Framework for Growth and Social Cohesion in Korea." Retrieved on December 7, 2012, from http://www.oecd.org/korea/48225033.pdf.

Park, K. 2008. "Population Change in South Korea." In *Korean Social Trends,* edited by H. Seok, 5–16. Seoul: Korea Social Science Data Archive Esquire Foundation.

Ryzin, V. 2009. "Measuring School Capacity for Positive Youth Development: A Confirmation of the Hope Study Model." EdVisions. Retrieved on November 8, 2012, from http://thepinnaclesgroup.com/wp-content/uploads/2010/03/The-Hope-Surveys.pdf

US Census Bureau. 2012 . "Denver Region." Retrieved November 8, 2012, from http://www.census.gov/regions/Denver.

Woo, M. S. 2010. "Equity in Educational Resources at the School Level in South Korea." *Asia Pacific Educational Review* 11: 553–64.

Wu, Q., L. A. Palinkas, and X. He. (2010). "An Ecological Examination of Social Capital Effects on the Academic Achievement of Chinese Migrant Children." *The British Journal of Social Work* 40 (8): 2,578–97.

Wurdinger, S., and J. Rudolph. 2009. "A Different Type of Success: Teaching Important Life Skills through Project-based Learning. *Improving Schools* 12 (2): 115–29.

Zhang, L., and K. A. Lee. 2011. "Decomposing Achievement Gaps among OECD Countries." *Asia Pacific Educational Review* 12(3): 463- 474.

OTHER READINGS

Barber, M. 2007. *Instruction to Deliver*. London: Politicos.

Barber, M., and M. Mourshed. 2007. *How the World's Best School Systems Come Out on Top.* New York: Mckinsey. Retrieved November 25, 2012, from http://mckinseyonsociety.com/how-the-worlds-best-performing-schools-come-out-on-top.

Barber, M., K. Donnelly, and S. Rizvi. 2012. *Oceans of Innovation.* London: Institute for Research on Public Policy.

Borman, G. D., G. M. Hewes, L. T. Overman, and S. Brown. 2003. "Comprehensive School Reform and Achievement: A Meta-Analysis." *Review of Educational Research* 73 (2): 125–230.

Brophy, J. 1988. "Research on Teacher Effects: Uses and Abuses." *Elementary School Journal* 89 (1): 3–22.

Bryk, A. S., P. D. Sebring, E. Allensworth, S. Luppescu, S., and J. Q. Easton. 2010. *Organizing Schools for Improvement: Lessons from Chicago.* Chicago: University of Chicago Press.

Chapman, C., and T. Allen. 2006. "Collaborative Reform for Schools in Difficulty." *Improving Schools* 9 (3): 291–301.

Chenoweth, K. 2008. *It's Being Done: Academic Success in Unexpected Schools*. Cambridge, MA: Harvard Education Press.

Creemers, B., and L. Kyriakides. 2012. *Improving Quality in Education: Dynamic Approaches to School Improvement.* London: Routledge.

Datnow, A., G. Borman, S. Stringfield, L. Rachuba, and M. Castellano. 2003. "Comprehensive School Reform in Culturally and Linguistically Diverse Contexts: Implementation and Outcomes from a Four-Year Study." *Educational Evaluation and Policy Analysis* 25 (2): 143–70.

Devos, G., M. Ekholm, K. Kofod, K. Louis, L. Moos, M. Schratz, and B. van Velzen. Forthcoming. *Political Culture and Educational Reform.* New York: Routledge.

Field, S., M. Kuczera, and B, Pont. 2007. No More Failures: Ten Steps to Equity in Education. Paris: OECD.

Firestone, W. A. 2009. "Culture and Process in Effective School Districts." In *Studies in School improvement,* edited by W. K. Hoy and M. DiPaola, 77–203. Charlotte, NC: Information Age.

Fullan, M. 1981. *The Meaning of Educational Change.* New York: Teachers College Press.

———. 2003. *The Moral Imperative of School Leadership.* Thousand Oaks, CA: Corwin.

———. 2010. *All Systems Go*. Thousand Oaks, CA: Corwin.

———. 2011 *The Change Leader*. San Francisco: Jossey-Bass and Wiley.

Good, T., and J. Brophy. 2007. *Looking in Classrooms.* 10th ed. New York: Harper & Row.

Hargreaves, A., and D. Shirley. 2009. *The Fourth Way.* Thousand Oaks, CA: Corwin.

———. 2012. *The Global Fourth Way*. Thousand Oaks, CA: Corwin.

Hattie, J. 2009. *Visible Learning.* London: Routledge.

———. 2012. *Visible Learning for Teachers*. London: Routledge.

Hopkins, D. 2007. *Every School a Great School.*New York: Open University Press.

Hopkins, D., S. Stringfield, A. Harris, L. Stoll, and T. Mackay. (Forthcoming) "School and System Improvement: A State of the Art Review*", School Effectiveness and School Improvement.*

Hubbard, L., H. Mehan, and M. K. Stein. 2006. *Reform as Learning: School Reform, Organizational Culture, and Community Politics in San Diego.* New York: Routledge.

Jensen, B., A. Hunter, J. Sonnemann, and T. Burns. 2011. *Lessons from High-Performing Systems in East Asia.* Melbourne: Grattan Institute.

Kerchner, C., D. Menefee-Libey, L. Mulfinger, and S. Clayton. 2008. *Learning from LA*. Cambridge, MA: Harvard Education Press.

Land, D. 2002. "Local School Boards under Review." *Review of Educational Research* 72: 229–78.

Leithwood, K. 2008. "Characteristics Of High Performing School Districts: A Review Of Empirical Evidence." Calgary: College of Alberta School Superintendents. Retrieved November 29, 2012 from, http://o.b5z.net/i/u/10063916/h/Communications/CASS_Research_Paper_1_Leithwood_Characteristics_ of_High_Performing_Districts.pdf.

Leithwood K., and B. Levin. 2005. "Assessing Leadership Effects on Student Learning: Selected Challenges for Research and Program Evaluation." In *Educational Leadership and Reform,* edited by C. Miskel and W. Hoy, 53–76. Greenwich, CT: Information Age.

Levin, B. 2008. *How to Change 5,000 Schools.* Cambridge, MA: Harvard Education Press.

———. 2010. "Leadership for Evidence-Informed Education." *School Leadership and Management* 30 (4): 303–15.

———. 2012. "Innovation, Transformation and Improvement in School Reform." In *School Effectiveness and Improvement: Research, Policy and Practice,* edited by P. Armstrong, C. Chapman, D. Muijs, D. Reynolds, and P. Sammons, 220–29. London: Routledge.

———. 2012. *More High School Graduates*. Thousand Oaks, CA: Corwin.

———. 2012. *System-Wide Change in Education.* Paris: International Institute for Education Planning and International Academy of Education.

Mac Iver, M. A., and E. Farley-Ripple. 2008. *Bringing the District Back In: The Role of the Central Office in Instruction and Achievement*. Alexandria, VA: Educational Research Service.

Mehta, J., R. Schwartz, and A. Gamoran, eds. 2012. The Futures of School Reform. Cambridge, MA: Harvard Education Press.

Mourshed, M. C. Chijioke, and M. Barber, M. 2010. *How the World's Most Improved School Systems Keep Getting Better.* London: McKinsey & Company.

Murphy, J., and C. Meyers. 2008. *Turning Around Failing Schools.* Thousand Oaks, CA: Sage.

O'Day, J., C. Bitter, and L. Gomez, eds. 2011. *Education Reform in New York City.* Cambridge, MA: Harvard Education Press.

OECD. 2010. "PISA 2009 Results: What Makes a School Successful?" Paris: OECD.

———. 2011. "Building a High-Quality Teaching Profession." Background paper for the International Summit on the Future of the Teaching Profession, New York, March 2011. Paris: OECD. Available at http://www2.ed.gov/about/inits/ed/internationaled/background.pdf.

Sahlberg, P. 2011. *Finnish Lessons.* New York: Teachers' College Press.

Sarason, Seymour B. 1971. *The Culture of the School and the Problem of Change.* Boston: Allyn and Bacon.

Stone, C., J. Henig, B. Jones, and C. Pierannunzi. 2001. Building Civic Capacity: The Politics of Reforming Urban Schools. Lawrence: University Press of Kansas.

Townsend, T., ed. *International Handbook of Research on School Effectiveness and Improvement.* Dordrecht, Netherlands: Springer.

Zhao, Y. 2012. *World-Class Learners.* Thousand Oaks, CA: Corwin.

APPENDICES

APPENDIX A: CHICAGO

Context

Chicago Public Schools is the third-largest school district in the United States, with a student population of 404,151. CPS has 472 elementary schools, 106 high schools, 96 charter school campuses, and 7 contract schools. The teacher-to-student ratio is, on average, 1 to 20 in elementary schools and 1 to 25 in secondary schools (Chicago Public Schools 2011).

CPS has a diverse student population that is 44 percent Hispanic, 42 percent African American, 9 percent white, and 3 percent Asian, with other ethnicities comprising the remainder of the population (Chicago Public Schools 2011). Students deemed bilingual, or with limited English language proficiency, make up 16 percent of the population, while 12 percent of the students receive special-education support through Individual Education Plans (IEPs) in elementary schools. The district also has a very high poverty student population, with a large number of students relying on the Free Lunch (F/L) program.

System Governance and Structure

Since the 1980s when it was declared the "worst in the nation," CPS has gone through three major waves of reform. For over twenty years, these three eras have embodied different basic concepts of reform and improvement, resulting in a series of large adjustments for the Chicago system. The first involved massive decentralization, which led to significant improvement in about a third of elementary schools and little change in secondary-school outcomes. CPS has experienced dramatic system-level reforms over each era that have not necessarily impacted student achievement as dramatically (Luppescu et al. 2011).

In the 1990s, the system moved to mayoral control and a more centralized approach, and recently it embraced charter schools and school reconstitution. Mayoral control allows for the appointment of the board of trustees, the CPS chief executive officer, and all senior appointments in the CPS (Bryk et al. 2010, 15). The Chicago Board of Education establishes policies, standards, goals, and initiatives to ensure accountability, governance and organizational and financial oversight of the school district. Since 1999, the Chicago Board of Education has expanded to include a vice president and seven board members (Chicago Board of Education, 2012).

Chicago is widely acknowledged as being a forerunner in school reform and in collecting student achievement data (Luppescu et al. 2011). Chicago has been one of the most studied sites of education change in the world, largely due to the work of the Consortium on Chicago School Research (CCSR), a group of researchers from several Chicago universities, school districts, and other organizations that focuses on programs for students from kindergarten to twelfth grade, particularly on student achievement in elementary schools (kindergarten to eighth grade). The CCSR was established in 1990 following the decentralization of the city's public school governance. CCSR studies have also influenced larger US reforms in public education (Consortium on Chicago School Research 2012).

Current Patterns of Achievement

Over the three eras of reform, graduation rates have increased and test scores improved. More students are graduating, without a decline in average academic performance. CPS elementary and middle schools that underwent reform demonstrated significant improvements over time (de la Torre et al. 2012). Math scores have improved gradually in elementary and middle schools, while reading achievement has remained quite stagnant for two decades (Luppescu et al. 2011). Still, overall attainment levels in Chicago, as in other large US cities, remain low by national and international standards. For instance, a large majority of CPS graduates are performing at achievement levels far below the national standard for college readiness (Luppescu et al. 2011).

The National Assessment of Educational Progress (NAEP), administered every two years, is used to track long-term achievement patterns across subject areas. Although NAEP scores indicate a modest growth between 2003 and 2009 for CPS fourth-graders, this overall growth is slower than that of most other large US cities. Reading achievement and math achievement saw no substantial change from 2005 to 2007, but drops in lower-performing schools were evident.

Over the third reform era, Latino students improved slightly, while white and Asian student improvement was modest. The increasing gap in reading and math scores between white and African American students is in stark contrast to national trends. CPS schools with a predominantly African American student population, as much as 85 percent, were four times as likely to be in the bottom growth category (Luppescu et al. 2011).

Since the 2008 provisions under the under the No Child Left Behind Act, English Language Learners (ELLs) have been required to take the same standardized tests as all students in the state of Illinois. These changes in reporting especially impacted Latino and Asian student achievement; their scores dropped noticeably during the second reform era (Luppescu et al. 2011).

Graduation rates improved for students in all racial and ethnic groups, and for both males and females. Although comprising a small part of the CPS student population, Asian students had the highest graduation rates (Luppescu et al. 2011). The rate of improvement in graduation rates for African American male students was smallest among the groups.

Challenges

CPS has experienced dramatic system-level reforms over the past twenty years that have not necessarily impacted student achievement equally as dramatically. Instead, district-wide improvements to achievement outcomes, if any, are considered to be incremental (Luppescu et al. 2011).

Since the 1960s, Chicago, like other large US cities, has seen many white and middle-class students leave its public school system. Today, Chicago public schools are about 90 percent minority students, primarily Hispanic and African American, with the proportion of Hispanics increasing steadily in recent years. More than 85 percent of Chicago students are from poor families, and 85 percent of elementary students rely on the Free and Reduced Lunch (F/L) program.

CPS continues to face a variety of challenges to academic achievement. The vast majority of CPS students have academic achievement levels that are far below state standards and requirements for college entrance (CCSR 2012). Student engagement and participation rates remain unchanged over Chicago's three eras of

reform. Since 2005, Luppescu et al. (2011) report a large decline in the level of student engagement. Additionally, an apparent decline in equity poses the largest threat to African American student achievement, bringing attention to possible causes, such as school closures in predominantly African American neighborhoods (Luppescu et al. 2011, 79).

Further, while overall achievement has improved, "Racial gaps in achievement have steadily increased, with white and Asian students making more progress than Latino students, and African American students falling behind all other groups" (Luppescu et al. 2011, 30). Increased racial gaps on elementary-school tests are evident, and test scores vary significantly across ethnic groups. Notably, African American students' scores showed the least amount of improvement in all eras of reform (Luppescu et al. 2011).

While some outcome indicators have gradually been improving in Chicago, outcome levels are still unsatisfactory. Reading levels have not changed very much in many years, and some gaps in achievement among ethnic groups have increased over time.

Key Improvement Initiatives

CPS has a number of initiatives to enhance student achievement and encourage preparation for college or careers after high-school graduation. The district is currently implementing a wide range of instructional strategies, professional development strategies, and school programs. The overall goal is to reduce inequities and achievement differences while increasing test scores, graduation rates, and college enrollment levels (Chicago Public Schools, 2012a).

District-Wide Instructional Strategy

Over the next few years, CPS will roll out a District Instructional Strategy for principals and teachers to deliver "quality of instruction" in all classrooms (Chicago Public Schools 2012c). As part of this strategy, the Common Core State Standards (CCSS) will provide a "higher bar" for what students need to know to achieve college and career success. Similarly, the Framework for Teaching is a set of standards for teachers to understand "what good teaching looks like" and how to self-assess their practice according to these skills (Chicago Public Schools 2012b). Additionally, the Full Day School initiative will provide students in urban schools with at least the same amount of instructional time as students in other districts.

System-Wide Strategies

CPS is also currently implementing the following initiatives to support student learning:

- Northwest Evaluation Association (NWEA) is a recently introduced measure of student growth that helps school leaders and teachers use student-growth data to better address their students' learning needs.
- REACH Students is a teacher evaluation system designed in partnership with the Chicago Teachers Union to give teachers tools for improving their teaching practice.
- Early College STEM Schools (ECSS) is a partnership between high schools and colleges follow CPS high-school graduation requirements. Students will also have the opportunity to graduate from high school with industry certifications, college credit, or possibly an associate degree in a technological field.

- International Baccalaureate Diploma Program is a college preparatory program that will expand to ten new high schools.
- Student progress report cards are free and publically available to parents as a tool to gauge the academic performance and college readiness of their child.
- Parent Portal is a web-based tool for parents to access their child's attendance and grades. It also allows direct communication with the classroom teacher.

CPS aims to increase student, parent, and family engagement in schools through partnerships with community organizations. The district manages the largest community school system in the United States, called the Community Schools Initiative (CSI). CSI has partnered with about fifty nonprofit organizations in more than 175 schools to address the needs of socioeconomically vulnerable students. The CSI project has schools serve as hubs for their communities to meet students' and families' academic and nonacademic needs and to develop educated citizens and strengthen local neighborhoods.

CPS encourages student participation in extracurricular and cocurricular activities. The district connects with parks, libraries, and local community agencies to provide students with opportunities to join book clubs, summer camps, and math and science technology academies.

CCSR/AIR Study

CCSR and AIR (American Institutes of Research) examined five different models used in thirty-six chronically low-performing schools. The goal of the study was to learn about the effectiveness of school reform efforts and their impact on student learning. The study found that Chicago high schools that underwent reforms did not perform differently from similar schools in terms of absences or percent of students who were on track to graduate by the end of the ninth grade.

Reform initiatives in low-performing schools relied on changing the school leadership and the school staff—the replacement of the school principal and teachers. These reconstitution initiatives are similar to the federal turnaround model, where principals are replaced along with at least 50 percent of the school staff, a new governance structure is adopted, and a new and/or revised instructional program is implemented. The CCSR/AIR study found that most of the schools under the reconstitution model did not improve in attendance or on-track rates (de la Torre et al. 2012).

Reducing Achievement Gaps

Education outcomes in Chicago have been challenging for a long time, mirroring those in many other large US cities. CPS hopes to overcome these challenges through its targeted initiatives that emphasize classroom instruction and staff leadership.

REFERENCES

Bryk, A., P. B. Sebring, E. Allensworth, S. Luppescu, and J. Easton. 2010. *Organizing Schools for Improvement: Lessons from Chicago.* University of Chicago Press.

Chicago Board of Education. 2012. "About" page. Retrieved November 12, 2012, from http://www.cpsboe.org/about.

Chicago Public Schools. 2011. "School Data: Racial Ethnic Survey." Retrieved October 19, 2012 from http://www.cps.edu/SchoolData/Pages/SchoolData.aspx.

Chicago Public Schools. 2012a. "Community Schools Initiative." Retrieved November 12, 2012, from http://www.cps.edu/Programs/DistrictInitiatives/Pages/CommunitySchoolsInitiative.aspx.

———. 2012b. "District Initiatives." Retrieved November 12, 2012, from http://www.cps.edu/Programs/DistrictInitiatives/Pages/Districtinitiatives.aspx.

———. 2012c. "Instructional Strategy." Retrieved November 12, 2012, from http://www.cps.edu/Programs/DistrictInstructionStrategy/Pages/Districtinstructionstrategy.aspx.

Consortium on Chicago School Research. 2012. "About CCSR." Retrieved November 12, 2012, from http://ccsr.uchicago.edu/about.

de la Torre, M., E. Allensworth, S. Jagesic, J. Sebastian, and M. Salmonowicz. 2012. *Turning Around Low-Performing Schools in Chicago*. Consortium on Chicago School Research. Retrieved November 12, 2012, from http://ccsr.uchicago.edu/sites/default/files/publications/12CCSRTurnAround-3.pdf.

Luppescu, S., E. Allensworth, P. Moore, M. de la Torre, J. Murphy, and S. Jagesic. 2011. *Trends in Chicago's Schools Across Three Eras of Reform: Full Report*. Retrieved November 2, 2012, from http://ccsr.uchicago.edu/sites/default/files/publications/Trends_CPS_Full_Report.pdf.

APPENDIX B: DENVER

Context

Denver Public Schools (DPS), in Denver, Colorado, consists of 108 elementary schools, 58 middle schools, and 36 high schools. The student population of 84,000 is supported by 17,762 staff members. Of the student population, 80 percent are minority students, 35 percent are English language learners (ELLs), and 72 percent rely on the free and reduced lunch programs.[1]

The City and County of Denver is situated in an eight-county metropolitan area, of which 535 square miles are considered urban land. The 2011 estimated population of Denver was 619,968, making it the twenty-third-most populous city in the United States (US Census Bureau 2012). Denver has seen a rapid growth since the 1990s. About 16 percent of people in Denver are foreign born, compared with 13 percent in the nation as a whole (US Census Bureau 2012. This rapid growth is the result of a significant ten-year migration (1997–2007) from Mexico and Central America. Hispanic students make up nearly 60 percent of the student population, Asian students represent 3 percent of the student population, and African American and white students comprise 15 percent and 20 percent of the students in the district, respectively. Of the ELL student population, 90 percent are Hispanic.[2]

This rapid population growth makes DPS the fastest-growing urban school district in the United States. It expanded by 10,600 students (almost 15 percent) in the past five years to 84,131 students according to district estimates. Since the last school year, DPS grew by 2,600 students, an almost 3 percent gain in one year and an almost 15 percent increase in enrollment over five years (Denver Public Schools 2012a).

System Governance and Structure

Education in the United States is quite decentralized and operates through independent districts, most of which are governed by elected boards. The Denver Board of Education has seven members, five of whom are elected from specific geographic regions, and two of whom serve citywide as at-large members. Board members serve a four-year term, during which they are responsible for policy making according to the state law.

While the majority of DPS schools are district run, many autonomous school models also exist in the district. The DPS Office of School Reform and Innovation supports four types of schools in their portfolio: charter, performance, innovation, and contract. Under state law, these four types of schools operate using varying degrees of autonomy over instructional materials, length of school day and year, personnel decisions, and student supports

Denver's theory of action is to combine best practices in centrally managed instruction with performance empowerment for schools, with the goal of accelerating academic achievement. The district centrally manages core elements of the instructional model, the key components of which are a baseline core curriculum, coordinated professional development, and interim formative assessment. Central direction

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[1] This data and information regarding Denver Public Schools was obtained via email communication with Alan Davis, Associate Professor at the University of Denver, Colorado.

[2] This data and information regarding Denver Public Schools was obtained via email communication with Alan Davis, Associate Professor at the University of Denver, Colorado.

around these elements of instruction is designed to accommodate for the district's high mobility rates, facilitate quality professional development around a common curriculum, and efficiently provide quantifiable interim assessments to guide differentiated classroom instruction. Balancing the benefits of a common core curriculum and centralized support for instruction with flexibility to differentiate both instruction and professional development is important to their theory.[3]

The three pillars of performance empowerment are capacity, autonomy, and accountability. Capacity refers to the existence of skills, leadership, and resources necessary for schools to succeed. Autonomy empowers individuals and schools with demonstrated capacity to direct resources and skills in a way that drives optimal results. DPS promotes autonomy for schools in the areas of people, time, and money. Through accountability, the district holds schools and individuals responsible for results through rewards, interventions, and consequences. In 2008 DPS developed and implemented the School Performance Framework (SPF), one of the more comprehensive tools for measuring school performance in the United States.[4]

Current Patterns of Achievement

School Performance Framework

Results from DPS's annual school report card—called the School Performance Framework (SPF)—show an increase in the number of schools that are meeting or exceeding expectations. Introduced in 2008, the SPF emphasizes student academic achievement growth and provides scorecards that measure a number of factors, such as attendance, college readiness, and student and parent satisfaction (Denver Public Schools 2012b).

Colorado Growth Model

The Colorado Growth Model is a statistical model to calculate each student's progress on state assessments and is a tool for displaying student, school, and district results to educators and the public. DPS has seen more academic growth than any medium or large school district in the state (see fig. 2). DPS also has realized the highest academic growth of any district serving a high-poverty student population (see fig. 3; Denver Public Schools 2012).

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[3] This data and information regarding Denver Public Schools was obtained via email communication with John Albright, Deputy Chief of Staff at Denver Public Schools.
[4] This data and information regarding Denver Public Schools was obtained via email communication with John Albright, Deputy Chief of Staff at Denver Public Schools.

Figure 2: DPS has the highest average Median Growth Percentile (MGP) of the ten largest Colorado school districts.
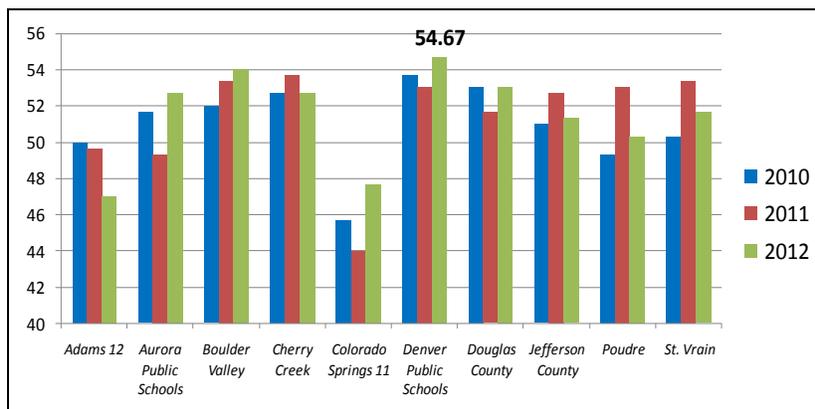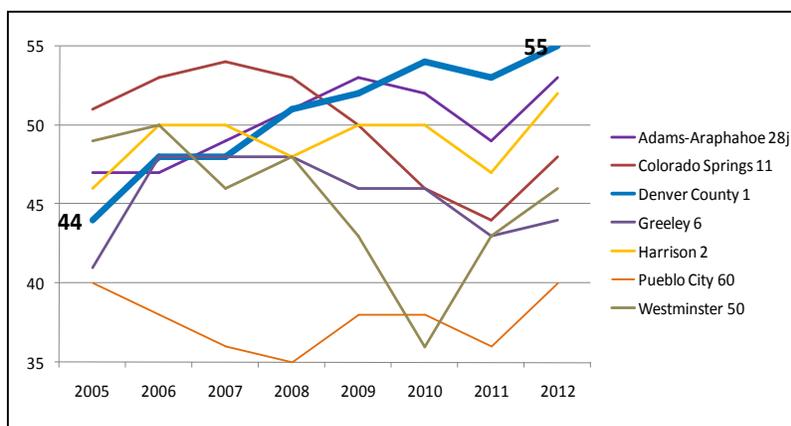

Figure 3: DPS has the highest average Median Growth Percentile (MGP) of Colorado's high-poverty school districts.

During the past seven years of Denver school reforms, school officials have placed significant emphasis on turning around low-performing middle schools. In particular, the SPF reveals growth in DPS middle schools, as over the past three years the number of DPS middle schools with the top ratings of Blue or Green has tripled from five to fifteen. Middle-school students have demonstrated achievement gains in four major subject areas: math, science, reading, and writing (Denver Public Schools 2012).

DPS schools have also seen a significant increase in the four-year, on-time high-school graduation rate, with an increase from 39 percent in 2007 to 56 percent in 2011 (Colorado Department of Education 2012). The DPS five-year graduation rate is, on average, 5 to 10 percentage points higher than the district's four-year rate. Given an additional year, hundreds more students graduate. If one considers the ninth-graders, who began their high-school career with DPS and continued through to graduation (i.e., those students who stayed in DPS schools throughout high school), this increases the DPS graduation rate another 6 to 8 percentage points. Additionally, DPS has also seen a higher rate of student retention in school, with a significant drop in the number of student expulsions (Denver Public Schools 2012).

CSAP and TCAP

The Colorado Student Assessment Program (CSAP) and Transitional Colorado Assessment Program (TCAP) provide student achievement results in comparison to statewide standards of education (Colorado Department of Education 2012). Every ethnic and socioeconomic subgroup in DPS showed an increase on TCAP reading scores from 2011 to 2012 (Denver Public Schools 2012), but the major challenge facing DPS is narrowing the achievement gap between middle-class and poor students.

Challenges

Despite slight increases on recent test scores over a four-year period, DPS is faced with addressing the needs of an increasingly diverse student population and bridging achievement gaps for ethnic and minority students. DPS recognizes the large discrepancies according to state results, academic achievement, and graduation rate for minority, low-income, and disabled students. Despite recent improvement, the DPS data show that less than 50 percent of students are proficient in the state's reading measures, less than 40 percent of students are proficient in mathematics and writing, and only half of all students graduate from high school.

DPS understands that their greatest challenge lies in supporting the educational needs of students who are not white or Asian (and who make up 80 percent of the student population). There is an ongoing 35-point achievement gap between African American and Latino students and their white and Asian peers. White and Asian students are the only groups meeting yearly progress goals at all grade levels, while the following groups continue to struggle: African American, Hispanic, Native American, English Language Learners, students with disabilities, and students relying on the free and reduced lunch program (Denver Public Schools 201b).

Key Improvement Initiatives

Denver Plan

The 2010 Denver Plan is a strategic action plan that is classroom-focused toward students, teachers, and content. Recognizing that the highest impact on student progress in schools is having highly effective educators in the classroom, the plan calls for increased teacher and principal development. Other features of the plan include deepening family engagement in schools, increasing stakeholder ownership, and strengthening community partnerships. Denver recently provided more resources to schools, more support for instructional coaches, and more targeted funding for schools with higher levels of poverty and larger populations of ELLs.

The district identifies four main priority areas for its work in the instructional core: helping educators grow (e.g., frameworks, coaching, feedback, and professional development of various kinds), shifting teaching practice (e.g., Common Core standards, culturally relevant curricula, assessment practice, instructional strategies), improving outcomes for linguistically diverse learners, and differentiating support to schools (e.g., more sharing of best practices, improving school climate and discipline practices, implementing a strategic school-support framework, improving extracurricular activities).

Instructional Initiatives

DPS has a plan for instructional initiatives that provide a best-practices approach to "equitable and differentiated supports and interventions to all schools" (Denver Public Schools 2012a). Some instructional initiatives include developing a decision-making framework for strategic school support, implementing systems for student transitions, improving disciplinary practices that align with state law, and increasing student engagement in cocurricular and extracurricular activities (Denver Public Schools 2012b).

Collaboration and Partnership

The district partners with various institutions of higher education. For example, the University of Colorado at Denver (UCD) School of Education and Human Development (SEHD) and Denver Public Schools (DPS) have established a formal partnership, called the UCD-DPS Research Collaborative. Since 2011, the UCD-DPS Research Collaborative has been aiming to find schoolwide practices that support the achievement of ELLs (University of Denver 2011). Stanford University's Center for Educational Policy Analysis and DPS have also established a CEPA-DPS Research Collaborative, focusing on principal effectiveness. DPS is also a Strategic Data Partner with Harvard University; the two institutions have worked together on issues of staff development and college readiness.

Supporting English Language Learners

DPS expects to strengthen systems and practices for ELLs and other diverse learners in order to improve the outcomes of these students. Teacher and administrator professional development is a key area of the DPS plan. For instance, the DPS plan continues to provide pilots for teacher and school-leader effectiveness frameworks (LEAP), results-based professional development throughout DPS, differentiated principal professional development, and an empowering instructional superintendent and director leadership group.

UCD-DPS Research Collaborative produced a cross-case analysis that identifies successful school-wide practices that have narrowed the achievement gap for ELLs and students relying on the lunch programs. The study finds that successful schools focus on literacy and biliteracy; the use of a "language lens" and academic language; the active use of data to guide instruction; professional development and coaching; strong distributed leadership and committed, well-trained teachers; active parent engagement; and a culture of continuous learning/improvement. Furthermore, the study notes the importance of school-wide second-language teaching and learning practices to support ELL success and integration into the school culture (DPS-UCD Research Collaborative, 2011).

Reducing Achievement Gaps

In sum, the DPS plan shares a variety of district- and school-level strategies intended to improve outcomes for minority and socioeconomically vulnerable students.

Colorado state achievement scores indicate that DPS has narrowed the achievement gap in reading and has remained static in other areas, such as math and writing. However, much work remains to be done where minority-student and ELL needs are concerned.

References

Colorado Department of Education. 2012. "Colorado Growth Model." Retrieved November 12, 2012, from http://www.schoolview.org/GMFAQ.asp#Q29.

———. 2012. "CDE: Improving Academic Achievement." Retrieved November 12, 2012, from http://www.cde.state.co.us/assessment/CoAssess-About.asp.

Denver Public Schools. September 2012. "DPS Progress under the Denver Plan Reforms" (PowerPoint slides).

———. 2012a. "Newsroom and Announcements." Retrieved November 8, 2012, from http://communications.dpsk12.org/announcements/denver-public-schools-is-fastest-growing-urban-school-district-in-the-u-s-.

———. 2012b. "Office of School Reform and Innovation." Retrieved November 18, 2012, from http://osri.dpsk12.org/portfolio.

DPS-UCD Research Collaborative. 2011. "DPS Exemplary Schools Case Studies: Cross-Case Analysis." Retrieved October 12, 2012, from http://www.ucdenver.edu/academics/colleges/SchoolOfEducation/FacultyandResearch/Projects/Documents/Cross-CaseAnalysisReport.pdf.

University of Colorado, Denver. 2011. "CU Denver – DPS Collaborative." Retrieved November 12, 2012, from http://www.ucdenver.edu/academics/colleges/SchoolOfEducation/FacultyandResearch/Projects/Pages/CU-Denver-DPS-Collaborative.aspx.

US Census Bureau. 2012. "Denver Region." Retrieved November 8, 2012, from http://www.census.gov/regions/denver.

APPENDIX C: EDVISIONS

Context

EdVisions is a network of forty-five loosely associated charter schools in eleven states across the United States. The EdVisions schools average 205 students per school, ranging from 100 students at the majority of schools, to over 1,000 students at some schools.[5] (Ron Newell, personal communication, November 2012).

The total student enrollment is 9,251, with an average teacher-to-student ratio of 1 to 18. The student population is 68 percent white, 11 percent African American, 9 percent Hispanic, and 5 percent Asian; 7 percent belong to other racial or ethnic groups. The majority of English Language Learners (ELLs) are Hispanic, and three charter schools cater specifically to Hispanic learners. A number of students (44 percent) participate in the free/reduced lunch (F/R/L) program. Students needing special education support comprise 26 percent of the student population.

System Governance Structure

EdVisions is a Minnesota-based nonprofit organization affiliated with the EdVisions Cooperative that began with a single school and expanded in the 1990s with funding from the Bill & Melinda Gates Foundation. A state charter law governs political leadership at each school, and charter schools have budgetary discretion to utilize state funding to develop student potential and achievement.

Although EdVisions provides coaching to all sites around self-directed projects that meet standards and classroom activity–oriented initiatives, all sites have a great degree of choice over the implementation of curriculum and expenditures. There is a high level of teacher autonomy, with teachers having significant control over site budgets. Schools generally spend more on program costs than administrative costs.

Current Patterns of Achievement

At EdVisions schools, achievement-gap issues are correlated more strongly with poverty and gender than with race. The network's approach to evaluating student outcomes is focused on student ability to develop as self-directed, lifelong learners.

Informal polls of sites show that approximately half of the students come to the sites at least one to two years behind in either reading or math, or both. EdVisions believes that their learning model has helped individual students achieve better than they had in their previous schools.

Studies on Achievement

EdVisions believes strongly in the correlation between hope and achievement. A study by Ryzin (2009) found that school environments that raise engagement and hope will eventually raise achievement in reading and math. The emphasis on hope and student engagement guides the EdVisions approach to supporting student achievement.

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[5] Unless otherwise noted, data and information regarding EdVisions was obtained via email communication with the study's associate investigator for Edvisions,Ron Newell, Director of Evaluation at EdVisions Schools.

Another study by Wurdinger and Rudolph (2009) of Minnesota State-Mankato looks at graduates of the Minnesota New Country School, the flagship school of EdVisions. The study found that school environments that focus on life skills are more conducive to deeper learning and lead to increased postgraduate success.

Further, the Northwest Evaluation Association (NWEA) is used to measure achievement gaps two to three times per year. If NWEA scores show that students test as nonproficient, EdVisions schools provide individual remediation until students are assessed as proficient on those state tests.

Hope Surveys

The network uses Hope Surveys to measure levels of student autonomy, belongingness, mastery goal orientation, academic press, engagement, and hope. The network does not use aggregated data, because doing so would contradict their philosophy about the importance of providing individualized learning plans.

The Hope Surveys reflect EdVisions' core belief that student engagement is correlated with dispositional hope and success in postgraduate careers. EdVisions operates on the premise that "schools can build a strong data-driven decision making model which ties together relationships, relevance, and rigor through continuous school improvement" (EdVisions 2012). Results from the 2012 Hope Survey indicate that major achievement issues can be attributed to students' lacking life skills and higher-order skills. Hope data matched with academic achievement scores can provide a detailed picture of the school environment and its effects on student performance.

Challenges

EdVisions schools are experiencing higher-than-state-average levels of special-needs students and students relying on free and reduced lunch programs. Meeting the needs of students of socioeconomically vulnerable backgrounds continues to be a challenge. Supporting special-needs students requires sustained commitment to providing individualized learning programs.

Additionally, the autonomy of EdVisions schools—while seen as an asset—comes with a set of challenges. For instance, in some situations, this autonomy has backfired in the form of staffing issues, greater leader mobility, and sites being too classroom-focused.

All EdVisions schools with grant money are expected to adhere to the EdVisions Evaluation Plan and Design Essentials, a comprehensive plan for evaluating student outcomes. However, as data collection is not mandatory, there may sometimes be discrepancies in reporting from sites. Furthermore, many challenges exist in aggregating data from all sites, because each site is responsible for collecting its own student achievement data. This loose and tentative relationship poses a challenge, because the individual sites may not have the resources or support to collect the data. In cases where data were collected, a great degree of variability exists. The No Child Left Behind Act (NCLB) and Adequate Yearly Progress (AYP) hindered sites from the development of assessment strategies for higher order skills.

EdVisions offers teachers many opportunities for professional development. However, these opportunities have been poorly accessed, possibly due to a lack of funds, allocation of money for in-house activities, as opposed to professional development programs.

Key Improvement Initiatives

Given the high degree of autonomy offered to each site, individual schools determine approaches to supporting low-achieving students, considering factors such as poverty, gender, and race/ethnicity. Personal Learning Plans (PLPs) are designed to target the unique learning needs of individual students.

Teacher Autonomy and Development

Each EdVisions site is responsible for its own staffing, and teachers are referred to as teacher-leaders. Teachers' knowledge about student achievement informs decisions about resource allocation, programs, and personnel. Professional development is available to help teachers implement the EdVisions Design Essentials, a program for instilling hope and engagement in the classroom curriculum. Staff at new sites are immersed in successful existing sites through week-long summer institutes. EdVisions provides teachers with a three-year coaching cycle and offers resources, print materials, webinars, conferences.

Parent and Community Involvement

Parent involvement is another important aspect of supporting student achievement in the charter school network. EdVisions schools are generally considered to be more parent-friendly, with greater parent participation and volunteering in schools.

Community groups, civil groups, and business networks also see frequent interaction with students. Students interact with local colleges and universities to discuss with professors potential programs, project ideas, and resources.

The Seven Attributes

The Bill & Melinda Gates Foundation identified Seven Attributes of Effective Schools. The seven items (common focus, high expectations, respect and responsibility, time to collaborate, technology as a tool, performance-based and active inquiry) are considered to be intimately linked with school success.

Four EdVisions sites have been studied by two research institutions, SRI International and AIR (American Institute of Research). Those in-depth studies have shown that EdVisions sites rank very high when compared with other Gates Foundation grant recipients.

EdVisions Achievement

Although there are some remaining challenges in continuing to meet the unique needs of students and in supporting students who come from socio-economically vulnerable backgrounds, EdVisions has demonstrated success in student-engagement initiatives. Altogether, EdVisions bridges student achievement gaps through its focus on life skills, highly individualized learning plans, student engagement, and teacher autonomy.

REFERENCES

EdVisions Schools. 2012. Home page. Retrieved November 12, 2012, from http://www.edvisions.com/default.asp.

Ryzin, V. 2009. "Measuring School Capacity for Positive Youth Development: A Confirmation of the Hope Study Model." EdVisions.

Wurdinger, S., and J. Rudolph. 2009. "A Different Type of Success: Teaching Important Life Skills through Project-based Learning." *Improving Schools* 12 (2): 115–29. Retrieved December 13, 2012, from http://imp.sagepub.com/content/12/2/115.short?rss=1&ssource=mfr.

APPENDIX D: SEOUL

Context

The Republic of Korea (hereafter referred to as "Korea") has a five-thousand-year history and is homogenous in ethnic identity—although it has slowly started to grow in its multicultural composition. The population of Seoul in 2011 was 10.6 million, with the total number of non-Korean residents being 41,123. The top three nationalities other than Korean are Chinese (30,842), Vietnamese (3,486), and Japanese (1,335), with 2,275 in the "miscellaneous" category. Geographically, Seoul encompasses an area of 233.67 square miles (605.21 square kilometers), accounting for approximately 1 percent of the nation's total area. Despite its small size, Seoul is home to approximately one-fifth of the nation's population, making it the largest city in the OECD.

As a result of the rapid increase in the number of foreign migrant workers and international marriages since the 1990s, there has been a sharp increase in the number of ethnic-minority students. Nevertheless, because a large proportion of migrant workers and immigrants tend to settle in rural areas, the student population in Seoul, the nation's capital, remains relatively homogenous. There are approximately four thousand students with ethnic backgrounds other than Korean (primarily Chinese or Japanese) in Seoul, out of a total of 1.2 million students. Although there is increasing interest in multicultural education among public-policy makers in Seoul, there is greater focus and concern for the city's fifty-five thousand students living below the poverty line.[6] Consequently, there are currently no prominent policy interventions for cultural- and linguistic-minority students in Seoul, and low educational achievement is most strongly associated with low socioeconomic status (SES).[7]

Socioeconomic Context

Since the middle of the twentieth century, Korea has achieved immense economic growth and, consequently, rapid growth and expansion in educational opportunities. The 1997 economic crisis, however, has led to consistently rising income inequality (Park 2008). In 2009 income inequality reached the OECD average, while relative poverty—the share of the population living on less than half of the median income—rose to 15 percent in 2008, the seventh highest in the OECD area.

System Structure

The current education system for Seoul, as well as for the rest of Korea, is a linear 6-3-3-4 system (that is, 6 years of elementary school, 3 of middle school, 3 of high school, and 4 of university or college). In Seoul, the total number of students is approximately 1.2 million students, with 2,185 schools and 79,140 teachers. There are 866 kindergartens, 594 elementary schools, 379 middle schools, 317 high schools, and 29 special-needs schools.

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[6] This is determined by family income and family structure (e.g., single-parent families) as prescribed by the Supplementary Welfare Allowance Act. The Seoul Metropolitan Office of Education supports these students with supplements for lunch, textbooks, tuition, extracurricular activities, computer, and internet services.

[2] This information was obtained via email communication with the study's associate investigator representing Seoul, Dr. Kyung-Nyun Kim (Deputy Director, Educational Welfare, Seoul Educational Office). Unless otherwise cited, data and other information were obtained from this source.

Governance

The organization responsible for educational administration in Korea is comprised of three layers of administrative authority. At the national level is the Ministry of Education, Science, and Technology (MEST). At the metropolitan/provincial level are the Seoul Offices of Education (i.e., SOME), and at the local level are the District Offices of Education.

Local District Office of Education Support

The Local District Office of Education Support was established in each municipality and province to ensure autonomy in regional education. To implement local educational autonomy, each municipal or provincial office of education has a superintendent (elected for a four-year term) and a board of education as a decision-making body, which makes major educational decisions. Decisions made by boards of education must be approved by the local councils.

The authority of the national and local governments is not clearly defined, and the local government depends on the federal government for half of its funding. While the minister and superintendents of education have a significant amount of power, there are no checks and balances in place with the congress. In Korea, policy is typically set at the discretion of government officials rather than by clearly defined laws.

School Councils

Since 1996, a School Council has operated in every national or public primary and secondary school to guarantee the autonomy of the school's management, and to foster community participation. Each committee is composed of seven to fifteen members, with 40 to 50 percent being parents, 30 to 40 percent being school staff (including the principal), and 10 to 30 percent being community members. Parent and teacher representatives are recommended for selection by direct election in their groups. Community representatives are recommended by the principal as well as by parent and teacher representatives. The term of a representative is one year and can be renewed up to three times. The School Council deliberates on school management matters, such as the budget, improvement of the curriculum, extracurricular activities, cooperative activities between school and community, student welfare, etc. It also advises the school principal on matters related to everyday school operations.

The total budget of the Seoul Metropolitan Office of Education for 2012 was US$6.5 billion.

Current Patterns of Achievement

According to 2009 PISA data, Korean students are improving in reading achievement. This can be attributed to the new national curriculum's stronger emphasis on critical- and creative-thinking skills through reading and writing, a greater focus on thinking ability in reading assessments, and changes in the university-entrance system, moving toward essay tests that assess both writing and logical thinking abilities (OECD 2011). Students excel at knowledge transmission, as evidenced by Korea's outstanding performance on all international assessment measures.

Challenges

In spite of Korea's high PISA performance and the great value it places on education, there is an increasing number of young graduates who are unable to find jobs equal to their level of qualification. Moreover, intense competition in education places heavy financial burdens on families, leading to significant equity issues (OECD 2011).

Studies show that students are not happy or engaged with their own learning. According to media research conducted for the *Chosun Ilbo* (one of Korea's major newspapers), 60 percent of high-school students responded that they were "unhappy" when asked how they felt about school; 42 percent said they never ask questions in class; 45 percent said they are reprimanded for asking a question or disagreeing with the teacher; and 42 percent said the main topic of conversation with their parents is studying and grades. These findings are consistent with PISA and Trends in International Mathematics and Science Study (TIMSS) data showing that Korean students report low interest, motivation, and confidence in reading, mathematics, and science, despite scoring high on the international tests.

The problem of students' discontent and disengagement in their educational experience can be attributed, in large part, to the focus on exam results as a primary indicator of educational success, as well as to the extreme pressures of higher-education entrance exams. Preparation requirements create barriers to fostering creativity, originality, and work-readiness skills. Students who are deemed less academically inclined are placed in professional high schools that provide vocational education and training. However, these schools are often academically oriented, with two-thirds of their students subsequently pursuing tertiary education. Since the academic program is less rigorous than in general schools, and since practical workforce training is lacking, effective training for tertiary education and for jobs is limited.

In light of these challenges, educational policies are currently focusing more on competence and creativity rather than knowledge regurgitation. In addition to the stress of exam preparations, challenges for low SES students include the following:

- The proliferation of shadow schooling/private tutoring. Social disparities are exacerbated by private tutoring in institutions known as *hagwon*, which are intended to help students gain admission to prestigious universities. A government survey found that 77 percent of students in primary and secondary schools go to private tutoring for an average of about ten hours a week. The proportion of students attending afterschool lessons in the language of instruction is the highest in the OECD, at three times the average. The proportion in Korea is highest for math and second highest for science and other subjects. Parents face extremely high financial burdens for *hagwon*. For instance, households with a child attending a *hagwon* pay an average of about 8 percent of their monthly income, the total cost amounting to 2 percent of the gross domestic product (GDP) in 2007. According to a recent survey of parents, the burden of education costs is the major factor for having fewer children than desired.

- The heavy importance placed on English language skills. This causes difficulties for low SES students, who are not able to afford private English lessons or study abroad, whereas their higher SES counterparts commonly can. Consequently, low SES students are disadvantaged in terms of opportunities to develop in their English language proficiency. This is problematic, considering the emphasis on English language skills in the job market.

Key Improvement Initiatives

Teachers

Teachers are highly respected by society and enjoy job stability, high pay, positive working conditions, and highly collaborative work environments. In addition, teachers in the public school system are equitably distributed, as they circulate on five-year intervals. In fact, low SES students in Korea are more likely than high SES students to be taught by high-quality teachers (see section *Achievement Improvement Target Schools,* below), and multiple incentives are offered to candidates who work in high-needs schools, including additional salary, smaller class size, less instruction time, additional credit toward future promotion to administrative positions, and the opportunity to choose the school they will work in next.

Curriculum Innovations

In recent decades, there has been a move toward a more explicit focus on communication skills to mitigate students' traditional fear of being wrong. Seoul began to implement internally developed curriculum innovations within schools in order to encourage creative expression and teamwork. Teacher–student discussions, as well as peer-to-peer collaboration in reading and writing activities, are meant to foster cooperation and creativity. In addition, student assessment is based more on creative-thinking processes than memorization.

School Choice

The issue of school choice is divisive. Some consider it an opportunity to improve educational outcomes, while others believe that it only serves to widen the achievement gap. Although the research literature indicates that choice is not an effective way to increase equitable outcomes, there is strong support and advocacy for school choice in Korea. It is as yet uncertain, however, how this policy will evolve.

School Equalization Policy (SEP)

The SEP is an overall framework aimed at narrowing achievement gaps across schools with respect to equity of resources—namely, budget and teacher quality. Schools are funded by a formula, regardless of the type of institution. The Seoul Office of Education also decides on the cost of tuition and teacher salaries. As a result of a combination of regulations and financial assistance, private schools have become almost identical to public schools in terms of accessibility to students, curriculum, and teacher quality. Students are typically assigned to a school based on its proximity to their residential address, with the exception of high schools, where a school-choice policy is in place. School performance differs based on communities' respective wealth. To narrow student achievement based on area of residence, Title 34, The Primary and Secondary School Decree, prescribes educational-welfare and cultural-enhancement policies for poverty-concentrated schools. The Seoul Office of Education runs two types of school projects to help alleviate these gaps: the Achievement Improvement Target Schools project and the Educational Welfare Investment Priority Schools project.

In addition, educational supervisors of the Seoul Metropolitan Office of Education who have demonstrated strong leadership skills are dispatched as principals to schools that have at least 15 percent of the student population in the free lunch program.

Achievement Improvement Target Schools (AITS)

Schools that consist of 5 percent or more students who are below the academic achievement standards as per the National Assessment of Students' Academic Performance are designated as AITS. In 2012, 27 schools in Seoul were so designated. These schools are provided with special funds (approximately half a billion won, or half a million US dollars) to run programs specifically targeting academically vulnerable students and allow more autonomy in the curriculum. The purpose of this initiative is to encourage schools to improve outcomes through diverse strategies. The school board in each school has the authority to reject a principal who has been assigned by the superintendent and to select one independently. AITS principals may choose up to 20 percent of the teachers. These teachers are given incentives for teaching in "complex school environments," with one of the most popular incentives being extra credit toward promotion.

Broader Connections with the Community

Schools provide low-achieving students with diverse programs, such as afterschool programs, counseling, and mentoring, and extracurricular teachers are hired for this purpose. Some schools develop partnerships with nearby colleges to recruit college students to act as mentors or instructors for vulnerable students. Students who wish to keep their academic status private are also given opportunities to have home visits from teachers.

Educational Welfare Investment Priority School Project (EWIPS)

In 2003, the Seoul Office of Education implemented the EWIPS project. As of 2012, 353 out of 1,239 Seoul schools were designated as project schools and are funded an average of 0.1 billion won (approximately US$93,000) per school. This project was created to provide cultural and educational benefits to students within poverty-concentrated urban schools. Under this program, students are given access to supplementary education, psychotherapy programs, cultural programs, and health education. Community organizations that are involved include youth work organizations, welfare organizations, hospitals, corporate social support teams, colleges, nongovernmental Organizations (NGOs), municipal offices, etc. Educational and Welfare Support Centers in eighteen communities help schools identify and allocate resources that are conducive to vulnerable students.

Exam Pressure

Korea is making efforts to implement strategies to address the disparities resulting from the College Scholastic Ability Test (CSAT), though they are challenging to overcome. One approach has been to encourage universities to diversify admissions criteria and place less weight on CSAT results. Although this may help reduce the stress associated with intense exam pressures and dependence on *hagwon,* the experiences of other countries where there is extreme competition suggest that families would reallocate their spending according to the revised admissions criteria. Several countries have taken the approach of encouraging or mandating the most prestigious universities to provide special entry routes for disadvantaged students, along with support programs. Since the importance placed on *hagwon* will not be easily overcome, Korea has been providing afterschool support programs to provide tutoring and study support, as well as financial assistance for low-income families (OECD 2011).

Korean Meister Schools

These professional high schools were put in place to provide students with skills relevant to the labor market, with the purpose of leading students to jobs or postsecondary technical programs. Through these schools, Korea has been attempting to improve its Vocational Education and Training system to offer better opportunities for disadvantaged youth (OECD 2011).

References

OECD. June 2011. "A Framework for Growth and Social Cohesion in Korea." Retrieved on December 7, 2012, from http://www.oecd.org/korea/48225033.pdf.

Park, K. 2008. "Population Change in South Korea." In *Korean Social Trends 2008,* edited by H. Seok, 5–16. Seoul: Korea Social Science Data Archive Esquire Foundation.

APPENDIX E: SHANGHAI

Context

Shanghai is the largest city in China, with a population of 23.47 million permanent residents,[8] of whom 9.35 million are from other parts of China. Ninety-nine percent of the population is Han Chinese, and 1 percent is made up of various minority groups.[9] Shanghai is one of China's most developed urban areas and is the nation's business and financial center. In 2009, Shanghai's GDP was US$11,563 per capita, and although its population and land account for 1 percent and 0.06 percent of the nation, respectively, the city contributes to one-eighth of China's income (OECD 2010). In 2009 the contribution of the service sector to economic growth in Shanghai was around 60 percent, the highest in mainland China.

Shanghai attracts many migrant workers—primarily from rural areas in mainland China—because of its opportunities for industrial and commercial employment. In 2011 approximately 501,700 migrant children received free compulsory education; of those migrant children, 74 percent were in public schools. In primary education, the number of children not in the *hukou* system (see footnote 4) amounted to 50 percent of the total Shanghai student population.

There are 1,916,700 total students (including kindergarten, primary school, and secondary school), with 200 senior teachers currently in service. There are also 82 senior principals, with 72 percent of them belonging to the urban areas, 18 percent suburban, and 10 percent rural. The total number of schools is 2,874: kindergarten 1,252, primary schools 766, general secondary 755, and vocational secondary 101. There are 148 private schools in total (19 private primary and 129 private secondary), accounting for 10 percent of all basic education institutions in Shanghai.

System Governance Structure

The management of basic education is carried out through a system called "Two-Tiered Government, Two-Tiered Management." Under this framework, the Shanghai Municipal Government and Education Commission is responsible for policy making and for supervising, monitoring, and evaluating school performance, while local governments at the district/county level are responsible for the implementation of school reform in their respective jurisdictions. Funds on basic education are primarily from the districts/counties under the municipal government, with some municipal support for.

Organization, Structure, and Staffing

Shanghai has a universal, nine-year, compulsory education system. Basic education follows a 5-4-3 format: 5 years for elementary school, 4 years for middle school, and 3 years for high school.

Current Patterns of Achievement

Shanghai was the first city in China to achieve a 100 percent enrollment rate for elementary- and middle-school students (including children of migrant workers), with 97 percent for high school (both general and vocational). In addition, more than 80 percent of students enter into higher-education institutions, in contrast to the national figure of 24 percent (Ding 2010).

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[8] Under China's *hukou* system, a system of household registration required by law, a "permanent resident" is someone who has been registered in the system for more than six months.

[9] Unless otherwise noted, data and information regarding Shanghai was obtained via email communication with the study's associate investigator for Shanghai, 徐瑾劼教授, Dr. Xu Jinjie (Maggie Xiu), a professor at Shanghai Normal University.

Shanghai was a top scorer in PISA 2009 rankings. The city's remarkable educational outcomes have been achieved through concerted public policy efforts, some of which are highlighted in the Key Improvement Initiatives section.

According to 2009 PISA data (OECD 2010), Shanghai students' learning styles have changed, with more use of the skills of generalizing, comprehension and memory, self-regulation, and elaboration, instead of simply learning by rote. In comparison to other OECD countries, the indexes of reading for pleasure, reading for enjoyment, and reading diversity are all above the OECD average.

Challenges

Shanghai's main educational challenges can be categorized into three broad areas: 1) disparities in quality between urban and suburban/rural students, 2) disparities in educational conditions between native Shanghai students and migrant students, and 3) the variances between schools attributed to historical traditions, as well as to teacher and administrator quality. Disparity in academic achievement attributed to gender is also an issue in Shanghai. According to 2009 PISA data, the achievement variance between schools in Shanghai is 38 percent, close to the OECD average, 39 percent.

Although the issue of migrant workers' children is a major concern, there are currently no official records on the achievement gap between native Shanghai students and migrant students.

One of the key challenges is the heavy emphasis on examinations as the primary indicator of educational achievement. The cultural and societal importance attached to examination results undermines the value of curriculum.

As a result of the emphasis on the importance of exams, it is estimated that 80 percent of students attend private tutoring classes. This, in addition to schoolwork and extracurricular activities, creates excessive pressures and stress on students.

Key Improvement Initiatives

Goals and Focus

Since the 1990s, Shanghai has shifted the focus from quantity to quality of education, promoting the strategy of equity development in compulsory education.

Children of Migrant Workers

In recent years, migrant children's right to an education has been a key policy priority of the Chinese government. Mandating that recipient cities take responsibility for migrant children's education was necessary, as recipient cities were pushing back against spending local taxpayers' money on educating migrant children. In 2008 the Shanghai municipal government launched a three-year compulsory education initiative for migrant children. As a result, in 2011, more than 500,000 migrant children received compulsory education. Among those students, 74 percent were educated through public schools, and 26 percent were educated in government-subsidized private schools.

Resource Sharing

To facilitate the sharing of good teaching practices, a web-based teaching and study platform was developed in 2008. In this platform, numerous resources for curriculum development and learning are available, as are research papers on teaching. Teachers also have opportunities to observe and learn from each other through teaching demonstration lessons (called "public lessons") for colleagues to observe and provide feedback on.

Improving Struggling Schools

Since 2006, students have been exempted from tuition and miscellaneous fees for compulsory education and have been provided with free textbooks and exercise books since 2007. There are, however, extreme levels of disparity among public schools in Shanghai—particularly between rural and urban schools. On average, rural schools had significantly lower capital spending than downtown schools (Shanghai Municipal Education Commission 2004). Consequently, it was required that a minimum standard for per-student public expenditure at different levels be established, with a transfer of public funds to poorer areas. Between 2004 and 2008, more than $US500 million was transferred to rural schools to help them build and update facilities and laboratories, purchase teaching resources, and increase teacher salaries (OECD 2010).

Urban and Rural Exchange

Since 2002, teachers have been transferred between urban and rural areas, since rural schools were experiencing challenges in recruiting teachers and in high teacher turnover. The government transferred a significant number of teachers from urban schools to rural schools, along with some outstanding urban principals. At the same time, young and middle-aged principals and teachers from rural schools were transferred to urban schools, with the expectation that they would return to the rural schools with experiences they gained from teaching in an urban setting (OECD, 2010).

Urban districts are also paired with rural districts. In 2005 nine urban districts signed three-year agreements with the educational authorities of nine rural districts. Authorities exchange and discuss their educational development plans and collaborate on issues such as teacher professional development. Teachers' Professional Development Institutes associated with both districts share their curricula, teaching materials, and effective practices. Furthermore, 91 schools were matched up as sister schools, and a substantial number of teachers participated in exchange programs among these schools (OECD 2010).

Commissioned Administration

"Commissioned Administration" is a type of school custody program in which the government commissions high-performing public schools to take over the administration of low-performing ones. It is believed that the ethos, management style, and teaching methods of the high-performing schools can in this way be transferred to the low-performing ones.

In 2007 the Shanghai municipal government asked ten high-performing urban schools and some educational intermediary agencies to oversee twenty weaker schools that provide compulsory education in ten rural districts and counties. The high-performing schools signed a two-year contract stating that they would send senior administrators and experienced teachers to the weaker schools. Expenditures for this endeavor are covered by the municipal government.

Neighborhood Attendance

Neighborhood attendance was implemented in 1994 at elementary- and middle-school levels, requiring students to attend their local schools and, in effect, eliminating the notion of "top" schools. Due to social pressures for opportunities to compete for admission to the "best schools," however, a compromise was established: students could choose schools in other neighborhoods by paying a sponsorship fee (this is, however, a controversial practice.)

Curriculum Reform

Current curriculum reform efforts have had a significant impact on education outcomes in five key ways: 1) the concept of focusing on "student development" has been strengthened; 2) classroom teaching activities have become more varied, with improved teaching capacity; 3) there has been an overall improvement in the areas of student academic achievement, innovation, and practical skills; 4) various types of expert teams are being used and developed; and 5) research teams have been significantly enhanced.

In 1985 Shanghai began to allow students to take elective courses as part of their efforts to alleviate exam pressures and increase the quality of education. As a result, new textbooks and materials were introduced. In 2008 there was a renewed effort to encourage learning rather than memorization, with curriculum reform in eight areas: 1) language and literature, 2) mathematics, 3) natural science, 4) social sciences, 5) technology, 6) the arts, 7) physical education, and 8) practicum.

Schools were encouraged to develop their own curriculum, and community organizations and groups such as museums became partners in education. Part of the new curriculum includes an emphasis on inquiry-based education. Students independently explore research topics of interest in order to promote social well-being, as well as creative and critical thinking.

Alleviating Exam Pressure

The central Chinese government is aware of the countrywide problem of cram schools (resulting from exam pressures), and its new reform plan calls for a reduction in student workload. Homework is such a burden to students that many local authorities in China have stipulated a maximum amount of homework (measured in hours) that schools are allowed to assign. Shanghai was among the first areas to impose such limits as a municipal policy.

Shanghai is additionally working to improve students' education experience, so that they learn to think analytically and creatively rather than just memorizing facts. An updated curriculum is at the center of this process (OECD 2010).

Teachers and Teacher Education

The Shanghai Municipal Government attaches great importance to the cultivation of school administrative and teaching staff. Over the last twenty years, the overall teaching quality of primary and secondary schools and kindergartens has been greatly improved.

Shanghai requires Continuous Professional Development (CPD) for teachers. Teachers are expected to engage in a certain amount of professional training hours within five years (240 hours for midlevel teachers, 540 hours for senior-level teachers).

Learning beyond Academics

In Shanghai, there is a municipal requirement that students participate in at least one hour per day of physical education. In the morning, there is an exercise class, followed by a midmorning "intermission exercise," with other physical activities held after school. Some schools conduct "eye exercises," where

students massage essential acupuncture points in order to prevent eyesight deterioration. Students also engage in various extracurricular activities, in sports and in the arts, to develop organization and leadership skills. Students also take turns at "daily duties," cleaning the classrooms and nearby corridors, for example, and work in assigned teams to keep their schools clean. There are also organized visits to rural villages or marginalized groups so that students can learn about social service. All these activities are coordinated by the municipal education authority (OECD 2010).

REFERENCES

Ding, G., ed. 2010. *Investigation and Policy Analysis of Professional Development of Primary and Secondary School Teachers in China*. Shanghai: East China Normal University Press.

OECD. 2010. Chapter 4: Shanghai and Hong Kong: Two Distinct Examples of Education Reform in China, in "Strong Performers and Successful Reformers in Education: Lessons from PISA for the United States." Retrieved from: http://www.oecd.org/countries/hongkongchina/46581016.pdf.