

Teacher Professional Development in Chicago: Supporting Effective Practice

Improving Chicago's Schools



Consortium on
Chicago School
Research

1313 East 60th Street
Chicago, Illinois 60637
773-702-3364

Report of the
Chicago Annenberg
Research Project

Mark A. Smylie
Elaine Allensworth
Rebecca C. Greenberg
Rodney Harris
Stuart Luppescu

April 2001

Executive Summary

This report addresses three general questions about teacher professional development in Chicago. First, what is effective teacher professional development? Second, to what extent do Chicago teachers experience effective professional development and where is there need for improvement? Third, what sources, means of delivery, and organizational supports, particularly at the school level, promote effective professional development? We present a model that defines effective professional development by frequent participation, quality pedagogy, and extended exposure to appropriate content. Analyzing data from 1997 and 1999 citywide teacher surveys, we found that professional development so defined is positively related to classroom instruction and to school-level orientation toward innovation.

We found encouraging evidence that Chicago teacher participation in professional development increased in 1997 and 1999 and that more teachers are experiencing high quality professional development. Improvement is particularly noteworthy among teachers in Chicago's lowest-achieving schools and among teachers in small schools. At the same time, we found that professional development experienced by substantial proportions of teachers lacks key pedagogical qualities that make it effective, including time to think about, try out, and evaluate new ideas in their classrooms, follow-up activities, and opportunities to work and learn with teachers from other schools. Moreover, some teachers who need the strongest support from high-quality professional development get less of it. These include high school teachers generally, beginning elementary school teachers, and teachers who work in large schools.

Teachers draw on many sources of professional development but they participate most frequently in school-based activity. We found that when teachers draw on a combination of sources, including teacher networks, external professional groups, and school-based activities, their professional development is overall of higher quality than when they draw primarily on only one source. We found greater participation and pedagogical quality than average in professional development experienced by teachers in probation schools and teachers in Annenberg schools, particularly at the elementary school level. Still, professional development in Chicago remains largely a fragmented and individualistic activity. Finally, we found that the quality of professional development can be promoted by principal leadership, school orientation toward innovation, and the strength of teacher professional community. At the same time, high-quality teacher professional development appears to strengthen these school-level supports in a mutually influential manner.

We conclude that professional development done well can help improve education for Chicago's students, but effective professional development requires substantial support. Efforts to improve professional development should go beyond simply increasing teacher participation to improving pedagogical quality and promoting extended exposure to useful content. The sources and means by which professional development is delivered to teachers should be carefully assessed. School-level supports, including time, for teacher learning and instructional improvement should also be developed. Finally, attention should be given to how system-level policies and procedures support or constrain effective professional development and instructional improvement.

Teacher Professional Development in Chicago: Supporting Effective Practice

Mark A. Smylie

University of Illinois at Chicago

Elaine Allensworth

Consortium on Chicago School Research

Rebecca C. Greenberg

University of Illinois at Chicago

Rodney Harris

Consortium on Chicago School Research

Stuart Luppescu

Consortium on Chicago School Research

April 2001

Foreword	1
I. The Need for Effective Teacher Professional Development	3
II. A Model of Effective Professional Development	7
III. The Impact of Effective Professional Development.....	11
IV. The Professional Development of Chicago's Teachers, 1997-1999	21
V. Providing Effective Professional Development to Teachers	33
VI. Supporting Effective Professional Development in Schools	45
VII. Interpretive Summary	55
Endnotes	58
References	62



John Booz

Foreword

In 1993 Ambassador Walter Annenberg announced a \$500 million challenge grant to improve public education in the United States. Cities wishing to receive a portion of that grant were invited to submit proposals describing how the funds would be used to stimulate educational innovation and collaboration in their public school systems. A group of Chicago school reform activists and education stakeholders, including parents, teachers, principals, community leaders, and foundation officers, organized to write a proposal to include Chicago among the sites receiving a grant. They were successful. In January 1995, the Annenberg Foundation awarded a five-year grant of \$49.2 million to establish the Chicago Annenberg Challenge. An additional \$100 million in matching funds was pledged by local donors. The Chicago Challenge has since been extended through 2001, a sixth year.

The Chicago Annenberg Challenge was organized to distribute and manage these monies among networks of schools and external partners throughout the city. Its mission is to improve student learning by supporting intensive efforts to reconnect schools to their communities, restructure schools, and improve classroom teaching. The Chicago Challenge funds networks and external partners that seek to develop academically successful schools through whole-school change, focusing particularly on three organizational problems—school and teacher isolation, school size and personalism, and time for learning and improvement. More than half of Chicago’s public schools will have participated at one time or another in an Annenberg-supported improvement effort by the end of 2001.

This report is one in a series of special topic reports developed by the Chicago Annenberg Research Project. This series focuses on key issues of concern to the Chicago Annenberg Challenge and to the improvement of Chicago’s public schools generally. It complements a series of technical reports that focuses specifically on the work and accomplishments of the Chicago Annenberg Challenge. Among the

topics examined to date in the special topic report series are the quality of intellectual work in Chicago elementary schools; school instructional program coherence; school size; social support, academic press, and student achievement; the work of external partners in school improvement; classroom instruction and student achievement; and, in this report, teacher professional development.

The work of the Chicago Annenberg Research Project is intended to provide useful information to the Chicago Challenge and the schools and external

partners who participate in its efforts to improve educational opportunities for Chicago's children and youth. This work is also intended to expand public discussion about the conditions of education in the Chicago Public Schools and the kinds of efforts needed to advance meaningful improvement. This effort to stimulate new avenues of discussion about urban school improvement is an important aspect of Ambassador Annenberg's challenge to engage the public more fully in school reform.

Acknowledgments

This report was made possible with the help of many people and organizations. The Chicago Annenberg Challenge provided the primary funds for this study and for the development and distribution of this report. Helpful comments and suggestions were received from Anthony Bryk of the University of Chicago and the Consortium on Chicago School Research, Stacy Wenzel of the Consortium, Fred Newmann of the University of Wisconsin-Madison, Valerie Lee of the University of Michigan, and Fred Hess of Northwestern University. Several staff members of the Consortium on Chicago School Research provided valuable assistance. Diane King Bilcer conducted initial analyses of the 1997 data. Sandra Jennings, Sarah-Kay McDonald, and Carolyn Saper provided editorial, design, and production services. The photographs are by John Booz.

I. The Need for Effective Teacher Professional Development

The argument is a familiar one, that efforts to improve schools and student learning will not get very far if we do not take seriously the need for teacher professional development.¹ For more than a century, teacher professional development has been viewed as an important means to support teachers and enhance their practice. At first considered necessary to correct the “deficiencies” of poor initial preparation, professional development was soon seen as an important means to “stimulate the general work of [all] teacher[s].”² By the mid-1970s, professional development was considered a way to support most efforts to improve teachers or schools.³ It was associated with the successful implementation of curricular and instructional innovations, and school organizational change.⁴ Now, teacher professional development is called a national imperative, the “missing link” to achieving America’s educational goals.⁵ It is believed to be particularly important for teachers in urban school systems, that serve large numbers and proportions of low-income, minority, and low-achieving students.

At the same time, teacher professional development has a long-standing reputation for poor quality and ineffective practice. In the 1940s and 1950s, professional development was characterized as “a waste of time” and “the slum of American education.”⁶ In 1996, the National Commission on Teaching and America’s Future criticized present practice as poorly designed, ill-conceived, and ineffective.⁷ While most observers note that not all professional development is terrible, this critique, offered by Matthew Miles of the Center for Policy Research, is fairly typical:

A good deal of what passes for “professional development” in schools is a joke—one that we’d laugh at if we weren’t trying to keep from crying. It’s everything that a learning [experience]

shouldn't be: radically under-sourced, brief, not sustained, designed for "one size fits all," imposed rather than owned, lacking any intellectual coherence, treated as a special add-on event rather than as part of a natural process, and trapped in the constraints of the bureaucratic system we have come to call "school." In short, it's pedagogically naïve, a demeaning exercise that often leaves its participants more cynical and no more knowledgeable, skilled, or committed than before.⁸

It is little wonder that national surveys of teachers find that professional development opportunities provided by schools and school districts are ranked among teachers' least valuable sources of learning and help for addressing classroom problems.⁹

Few people question the need for effective professional development for Chicago Public School teachers. Chicago teachers confront growing challenges that call for effective professional development. They teach a student population that has become increasingly diverse racially, ethnically, culturally, academically, and linguistically. As students face higher standards for learning and increased accountability for their performance, teachers face increased pressure to help their students succeed. Demands on teachers are heightened by the stakes associated with student grade retention, and school probation and reconstitution. There is a growing imperative that teachers be more successful with retained students and the system's persistently low-achieving students. The recent federal court order in *Corey H.* mandates greater inclusion of special education students in regular classrooms. Further, the State of Illinois recently passed legislation tying teacher re-certification to completion of 120 hours of professional development every five years.

More than a few principals point to lack of teacher knowledge and skills as a roadblock to school improvement. A number of principals also question whether their teachers have the skills to teach students at greatest risk of retention. Moreover, many teachers report that their professional development is inadequate to support changes introduced at their schools.

The CPS central administration recognizes the importance of teacher professional development. In a 1999 issue of *Catalyst*, a periodical devoted to issues of Chicago school reform, CPS Chief Education Officer Cozette Buckney wrote of the "urgent need" to support the development of every teacher in Chicago, arguing:

The single most important ingredient in student learning is the quality of teaching. With the right kind of teaching, and the right kind of support for teacher development, we know that all children can learn.... Anyone who supports improved student learning in Chicago should be supportive of every effort to support teacher preparation and development.¹⁰

Opportunities for teacher professional development abound in CPS. The system provides numerous professional development activities through its Teachers Academy for Professional Development, the Chicago Systemic Initiative for math and science education, and the Learning Technology Initiative. It provides support for beginning teachers and their veteran mentors through the Mentoring and Induction of New Teachers (MINT) program. The system provides teachers in its lowest-achieving schools opportunities for professional development through probation partners and managers, and points to its student learning goals and standards, model curricula, and centrally developed lesson plans as means to better "equip teachers for the classroom."¹¹ The system is also developing a new National Teaching Academy of Chicago, where young teachers will be taught by master teachers and where experienced teachers can find opportunities to keep up with changes in the field of education. Additional opportunities for teacher professional development come from the Chicago Teachers Union Quest Center, the Chicago Annenberg Challenge, the Teachers Academy for Math and Science (TAMS), and a myriad of independent school-level programs and projects, many associated with area colleges and universities, and providers from the private sector.

Still, teacher professional development in CPS has received its share of criticism. In 1998, *Catalyst* published a special issue on teacher professional development.¹² This issue charged that despite the large amount of learning opportunities available to teachers, the system has no clear vision for teacher professional development and fails to support professional development adequately. It argued that teacher professional development is under-funded¹³ and that the system fails to provide adequate time for meaningful teacher learning and development.¹⁴ In a *Chicago Tribune* editorial that followed this special issue, *Catalyst* editor Linda Lenz concluded:

To be sure, there is a lot of professional development work going on in the system, some of it initiated by the Board but most arising from the private, non-profit sector. However, much of it falls short of what is needed in both quality and quantity. If Chicago's kids are going to have any hope of reaching the high standards the school board has set for them, those shortcomings must be overcome.¹⁵

If there is a strong need for teacher professional development in Chicago and a will to do professional development well, three basic questions should be addressed. First, what makes professional development effective? Second, to what extent do Chicago teachers experience effective professional development and where is there need for improvement? And, third, what sources, means of delivery, and organizational supports, particularly at the school level, promote effective professional development? This report provides some answers to these questions.

We begin by presenting a model of effective teacher professional development. We turn to findings from the Chicago Annenberg Research Project that provide evidence of the effectiveness of this model for improving classroom instruction and promoting school orientation toward innovation. Next, we examine the characteristics of professional development experienced by different groups of Chicago teachers in 1997 and 1999, looking at how those characteristics reflect our model of effective professional development. Then, we examine the characteristics of professional development associated with different

Principals' Perceptions of the Need to Improve Teacher Effectiveness

According to the 1999 citywide principal survey administered by the Consortium on Chicago School Research, 16 percent of principals reported that lack of knowledge and skills among teachers at their schools is a *serious roadblock* to school improvement. Another 48 percent considered lack of teacher knowledge and skills *somewhat of a roadblock* to school improvement. Moreover, 26 percent of principals agreed or strongly agreed that teachers in their schools do not have the skills needed to work with students at risk of being retained.

Teachers' Assessments of the Adequacy of Their Professional Development

In the Consortium's 1999 citywide survey, teachers were asked if they received adequate professional development support for changes that are introduced at their schools. About 20 percent of elementary teachers and 41 percent of high school teachers reported that they did *not* receive adequate professional development to support these changes.

sources and delivery mechanisms. We look specifically at professional development associated with two major school improvement initiatives—CPS’ probation policy and the Chicago Annenberg Challenge. Together these initiatives touch more than half of the system’s schools and seek to promote improvement in the system’s lowest-achieving schools. Finally, we consider the influence of four school-level supports

on the quality and effectiveness of teacher professional development—time, principal instructional leadership, school orientation toward innovation, and teacher professional community.¹⁶ We conclude with an interpretive summary of our findings and implications for improving professional development for Chicago’s teachers.

II. A Model of Effective Professional Development

Professional development can refer to many things. Sometimes the term is used to describe the whole wide range of learning opportunities available to teachers, including formal, planned learning activities provided to teachers by their schools, districts, or external providers; informal learning from interacting and working with colleagues; incidental learning from classroom experience; and individual, self-directed study. In this report we define professional development more narrowly as formal learning opportunities provided to teachers to improve their knowledge, skills, and classroom practices.

There are also many definitions of “effective professional development.” The meaning of the word “effective” depends on what one is trying to achieve. Teacher professional development can aim to achieve many objectives, from assuring compliance with administrative rules and procedures, to promoting the implementation of programs and practices, to enhancing the general knowledge, skills, and practices of individual teachers, to developing school capacity for improvement.¹⁷ Different models of professional development, properly implemented, will achieve different objectives¹⁸ and, thus, depending on the objective, different forms of professional development can be considered effective.

For example, training models are generally effective for promoting the acquisition of knowledge and skills and the implementation of discrete teaching practices. They are also good for promoting compliance with administrative rules and procedures. Training models are not very effective for promoting higher-order learning, reflective practice, and innovative responses to complex problems.¹⁹ Today’s high academic standards, the curricular and instructional approaches required to achieve them, and the complexity of today’s classrooms require more from teachers than the ability to replicate discrete practices. They require the capacity to be creative, inventive, and adaptive.²⁰ Judith Little, of the University of California at Berkeley, maintains that the dominant training model of teacher professional development is

inadequate to meet such requirements and achieve the ambitious visions of teaching and learning embedded in current reforms. She argues that:

The well-tested models of skill development, built on the staff development and implementation-of-innovations literature, will work reasonably well to introduce those aspects of reform that are technical or that can be rendered as a repertoire of classroom practices. . . . However, much of what we anticipate in the present reforms does not lend itself to skill training because it is not readily expressed in terms of specific, transferable skills and practices. . . . We know how to do training well, and could profitably do more of it well; the training paradigm, no matter how well executed, will not enable us to realize the reform agendas . . .²¹

We are particularly concerned with professional development that promotes ambitious, intellectually challenging instruction that leads to gains in student achievement. We define improvement in classroom teaching as increased use of “interactive” instruction. Interactive instruction refers to interactive, problem-oriented, differentiated strategies to promote analysis, application, and production of knowledge among students. This approach to instruction is sometimes compared to didactic instruction which refers to teachers’ use of whole-class presentation, recitation, and individual student work to transmit and promote the acquisition of discrete knowledge and skills.²²

Our interest in interactive instruction is derived from other work conducted by the Chicago Annenberg Research Project that has examined the comparative effects of didactic and interactive instruction on student achievement. A report by Julia Smith, Valerie Lee, and Fred Newmann presents evidence that high use of interactive instruction promotes greater one-year achievement gains on reading and math portions of the Iowa Tests of Basic Skills (ITBS) than high use of didactic instruction.²³ A related report by Fred Newmann, Anthony Bryk, and Jenny Nagaoka found positive relationships between the intellectual challenge of classroom assignments and student achievement.²⁴ Students whose teachers gave them more

intellectually challenging assignments made greater gains on the ITBS and on assessments of the Illinois Goal Assessment Program (IGAP) than students whose teachers gave them less intellectually challenging assignments. The concept of intellectual challenge used in that report is consistent with the concept of interactive instruction used by Smith and her colleagues and by this report.

While these studies point to the importance of increased use of interactive instruction in improving student achievement, teachers use combinations of instructional strategies. It is rare that a teacher would use one instructional approach to the exclusion of any other. Moreover, there are instructional goals and circumstances for which didactic instruction is most appropriate. Therefore, while our data emphasize the use of interactive instruction, it is also important to examine the relationship of professional development to didactic teaching.

We are also concerned with professional development that promotes ongoing teacher learning, experimentation, and innovation, not just among teachers individually but on a school-wide basis. Such a school orientation toward innovation provides a foundation and an impetus for school-wide improvement in classroom instruction. It also creates a context for the examination of classroom practice and for efforts to achieve effective balances among different approaches to teaching.

What kind of professional development can best achieve these objectives? Since the early 1990s, a consensus view of effective professional development has emerged. This view is reflected in reports of the National Staff Development Council, the National Commission on Teaching and America’s Future, and the National Partnership for Excellence and Accountability in Teaching.²⁵ It is virtually identical to guidelines for effective professional development presented more than 40 years ago by the National Society for the Study of Education.²⁶ Looking across these sources we find a core of common elements that describes effective professional development as:

1. Experiential, engaging teachers in concrete tasks of teaching, assessment, and observation.
2. Grounded in participants’ questions, inquiry, and

experimentation as well as research on effective practice.

3. Collaborative, involving sharing of knowledge among educators.
4. Connected to and derived from teachers' work with their students as well as connected to examination of subject matter and teaching methods.
5. Sustained, intensive, and supported by follow-up activities.
6. Connected to other aspects of school improvement in a coherent manner.

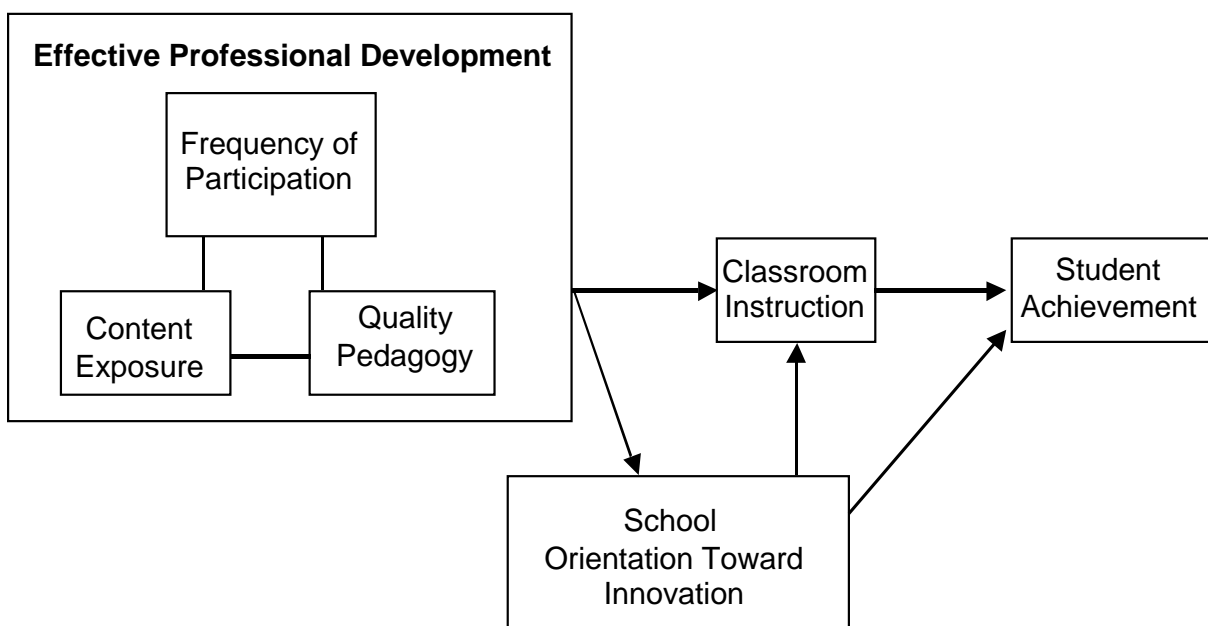
These characteristics of effective professional development call attention to both the curriculum and the pedagogy of professional development; that is, “to *what* teachers learn and *how* teachers are taught.”²⁷ They also point to the importance of frequent participation, sustained involvement in professional development, and teachers' influence over their own learning. This view of effective professional development is consistent with theories of adult learning and of how teachers learn to teach.²⁸ It is also consistent with the judgments of experienced educators.²⁹ In addition, there is a small but growing body of research

that shows that these elements of professional development are associated with instructional improvement and subsequent student achievement.³⁰

This consensus view forms the basis of our model of effective professional development. This model is shown in Figure 1. At the center are three basic elements of professional development practice: (a) the frequency of teacher participation, (b) exposure to content, and (c) pedagogical quality. By frequency of participation, we mean the quantity of professional development that teachers experience. Content exposure refers to the “what” of professional development, the topics that teachers study to improve their practice. All professional development has content to it. Here, we are concerned with teachers' exposure to content that facilitates the types of improvement sought. Our premise is that certain content is more likely to promote certain kinds of teaching than other content. Therefore, we would expect that the particular content of professional development that teachers experience would relate to the kinds of teaching approaches they use. By pedagogical quality, we refer to the “how” of professional development, the manner in which it is conducted. From the consensus view

Figure 1

Model of Effective Professional Development



presented above, professional development pedagogy can be considered of high quality when it is experiential, collaborative, and grounded in teachers' own work and in research on best practices. It should also be focused on subject matter and instruction, and connected to broader school improvement efforts. Finally, it should be sustained, intensive, and supported by follow-up activities.

In our model, the three elements of effective professional development—participation, content exposure, and pedagogical quality—are linked to two outcomes with which we are concerned: classroom instruction and school orientation toward innovation. The model shows an indirect influence of professional development on student achievement through class-

room instruction and school orientation toward innovation.³¹ That is, student learning is unlikely to be influenced directly by teacher learning, but rather by the changes in teacher practice and other improvement efforts that result from teacher learning.

Our model indicates that effective professional development—defined by frequent participation, high quality pedagogical processes, and content focused on improvement sought—will positively influence teachers' instructional practice. It will also promote school orientation toward innovation, which can support school-wide instructional improvement. Finally, the model indicates that effective professional development can promote student learning through its influence on classroom teaching.

How We Did the Study

Data for this study come from citywide surveys of teachers administered in spring of 1997 and 1999 by the Consortium on Chicago School Research. Survey data were available from 13,000 teachers in 1997 and 9,900 teachers in 1999. These samples of teachers are comparable demographically to teachers system-wide. Rasch measures were used for each of our analyses. These measures and the items that compose them are described in sidebars contained throughout the report. For our analyses of relationship of professional development to instruction and school orientation toward innovation, we used three-level hierarchical linear models. We also used these models for our analyses of how principal leadership and teacher professional community support professional development. In our analyses, we took into account a number of teacher characteristics and school demographic characteristics including the size of the school, the proportion of low-income students, student mobility rate, racial and ethnic composition, and level of student achievement. We also controlled for initial levels of variables in our analyses of change. Our analyses of professional development and instruction are at the teacher level. The rest of our analyses are conducted at the school level, using school-wide averages of data provided by individual teachers. Details of how we conducted these analyses are contained in endnotes.

III. The Impact of Effective Professional Development

Our model suggests that the effectiveness of professional development is determined by the extent to which it engages teachers frequently with appropriate content, through high quality pedagogical practices. Given that much of the professional development that teachers experience has been criticized as ineffective, we looked for evidence that these elements of professional development can positively affect teachers' instructional practices and school orientation toward innovation. Teachers' professional development experiences can vary substantially across these elements. For example, teachers can participate frequently in low-quality professional development. They can also participate infrequently in high-quality professional development. Moreover, they can participate frequently or infrequently in professional development organized around a myriad of topics that may or may not be conducive to the instructional or school improvement sought. Because of the analytic difficulties associated with such variations, we examined independently the relationships of each element of professional development to classroom instruction and school orientation innovation, controlling statistically for the other elements.

First, controlling for the amount of professional development in which teachers engage, we sought to determine whether the pedagogical quality of professional development predicts teachers' use of interactive and didactic instruction, and school orientation toward innovation. Then, since teachers may be required to participate in a great many hours of professional development regardless of its quality or content, we looked at whether more time spent in professional development, independent of content or quality, is related to teachers' instructional practice and school orientation toward innovation. Finally, because the outcomes expected from professional development should reflect its substantive foci, we sought to determine whether teachers' exposure to different professional development content is associated with different approaches to instruction.

Our analyses of professional development and classroom instruction focused on the experiences of individual teachers. Because many teachers pursue professional development on their own (see sidebar on page 28) and because teaching practices often vary considerably within schools, we expected that most of the effects of professional development on instruction would be seen among individual teachers rather than among schools. Therefore, we sought to determine how individual teachers' professional development experiences related to their own instructional practices. Because our surveys cannot link individual teacher data across time, we were limited to cross-sectional comparisons. Using data from the 1997 and 1999 surveys, we compared the relationships between each component of professional development and teachers' use of interactive and didactic instruction.³²

While much professional development is experienced individually, the combined involvement of a school's faculty in professional development should also bring about change at the school level, particularly an overall orientation toward improvement. Therefore, we focused our analysis of the relationship between professional development and change in orientation toward innovation at the school level. We examined how the average experiences of teachers within a school were related to average orientation at that school. Our surveys are able to link schools across time and therefore we were able to look at changes in orientation toward innovation across time. We studied whether professional development in 1997 was related to change in orientation toward innovation from 1997 to 1999. We also looked at whether changes in professional development between 1997 and 1999 were related to changes in this orientation during the same period.³³ Each analysis controlled for a number of teacher characteristics and school demographic characteristics including school size, proportion of low-income students, student mobility, racial and ethnic composition, and level of student achievement. We also controlled for initial—1997—levels of outcome measures.

Perhaps the most important criterion for determining the effectiveness of teacher professional development is student achievement. We acknowledge the ultimate importance of this outcome in our model,

but we did not examine student achievement directly in our analyses. In presenting our model, we argued that professional development is most likely to affect student achievement indirectly; that is, through its influence on instruction or other areas of teachers' classroom practice. Since other reports of the Consortium and Chicago Annenberg Research Project have examined the relationship between instruction and student achievement, we did not replicate those efforts.³⁴ Instead, we focused on the influence of professional development on teachers' instructional practice and school orientation toward innovation.

The sidebars in this section describe how elements of professional development, classroom instruction, and school orientation toward innovation are defined and measured.³⁵ Our analyses of the effects of professional development on instruction focus only on elementary schools. We lack comparable data on professional development content at the high school level. And, while our analyses of the effects of professional development on instruction considered content exposure, our analyses of the effects of professional development on school orientation toward innovation did not. Promoting teachers' use of different instructional approaches presupposes exposure to different professional development content. Similarly, an orientation toward innovation presupposes a particular substantive direction for innovation. However, as shown in the accompanying sidebar, our measure of orientation toward innovation is a general one that focuses on processes of examination, experimentation, and ongoing learning and growth. If this measure were defined around more particular substantive directions for innovation, say, intellectually-demanding instructional improvement, we might then be able to examine the relationship of particular professional development content to the development of that particular orientation.

Impact on Instruction

We investigated whether teachers' professional development experiences are related to their use of interactive and didactic teaching.³⁶ As noted earlier, interactive teaching refers to teachers' use of interactive problem-oriented strategies to promote analysis, application, and production of knowledge. Didactic

How Elements of Professional Development Were Measured

Frequency of Participation

The frequency with which teachers participate in professional development was computed from items taken from the 1997 and 1999 surveys. These items asked respondents to report the number of times during the school year that they participated in professional development activity. These include activities organized by teachers' own schools, networks of teachers from other schools, outside professional groups or organizations, college and university courses, workshops provided by CPS, and activities sponsored by the Chicago Teachers Union.

Exposure to Content

On the 1997 survey, teachers were asked to identify from a list of 20 topics three to which they devoted most of their professional development time. They were then asked to record the general amount of time they spent studying each of these three topics. From these reports, we grouped the most frequently mentioned topics into four categories:

- Teaching basic skills and core academic subjects (e.g., reading/language arts and English teaching, mathematics teaching).
- Small group instruction (e.g., cooperative learning, teaching heterogeneous groups).
- Interdisciplinary or integrated curriculum and instruction.
- Student behavior and classroom management.

Our indicator of content exposure is whether or not teachers spend 15 or more hours during the course of a year in professional development on each of these subjects. This benchmark of 15 hours is relatively low. It is equivalent to in-class time required for one semester hour of credit in a college or university course.

Pedagogical Quality

In a series of items on the 1997 and 1999 surveys, teachers were asked the extent to which the professional development they experienced that school year reflected particular pedagogical qualities. These items, which were combined into a single measure, asked teachers whether their professional development:

- Addressed the needs of students in the teacher's classroom.
- Was sustained and coherently focused, rather than short-term and unrelated.
- Included enough time to think carefully about, try, and evaluate new ideas.
- Included follow-up activities.
- Was closely connected to school improvement plans.
- Included opportunities to work productively with colleagues at the teacher's school.
- Included opportunities to work productively with teachers from other schools.
- Left teachers to seek out professional development on their own (reversed).

The measure is presented on a scale of 1 to 10 where 1 to 2.3 represents minimal quality, 2.3 to 4.3 represents low quality, 4.3 to 7.0 represents moderate quality, and 7.0 to 10.0 represents high quality. The internal reliability coefficients for this measure are .70 for 1997 and .79 for 1999.

How Interactive Instruction Was Measured

Interactive instruction was measured with similar items on both the 1997 and 1999 surveys that asked teachers to report how often they used the following strategies:

- Assign projects of at least one week's duration.
- Relate the subject matter to students' experience and interests.
- Have students work in cooperative groups.
- Have students brainstorm ideas for written work.
- Have students discuss or debate ideas for more than half a period.
- Give assignments requiring students to write at least four pages (1,000 words).
- Use writing process methods where students plan, draft, revise, edit, and publish compositions, often with peers.

This measure also included items that asked teachers to report the percentage of lessons or class time that they devoted to:

- Studying a topic in-depth, rather than covering basic facts, concepts, and procedures.
- Having students explain to the teacher or classmates how the topic relates to their personal experiences or a problem in the contemporary world.
- Requiring students to organize, interpret, evaluate, and use information to produce a piece of original work.

Finally, this measure included items that asked teachers to report the importance they placed on the following types of assessments in their teaching:

- Student discourse in class.
- Student presentations of their work.
- Essay tests.
- Student work on open-ended questions.
- Individual student projects.
- Group projects.

The internal reliability coefficients for this measure are 0.88 for 1997 and 0.87 for 1999.

How Didactic Instruction Was Measured

Didactic instruction was measured with similar items on both the 1997 and 1999 surveys that asked teachers to report how often they used the following strategies:

- Have students memorize facts or procedures.
- Lecture to the class for more than half the period.
- Have students complete workbook or textbook exercises in class.
- Have students read silently.
- Have students take turns reading aloud.
- Use highly structured call and response activities.

This measure also included items that asked teachers to report the percentage of lessons or class time that they devoted to:

- Covering basic facts, concepts, and procedures related to a topic.
- Listening skills.
- Vocabulary.
- Proper grammar, punctuation, etc.
- Note-taking and study skills.

Finally, this measure included items that asked teachers to report the importance they placed on the following types of assessments in their teaching:

- Multiple choice, true-false, fill-in-the-blank tests.
- Short-answer tests.
- ITBS scores.

The internal reliability coefficients for this measure are 0.77 for 1997 and 0.74 for 1999.

How School Orientation Toward Innovation Was Measured

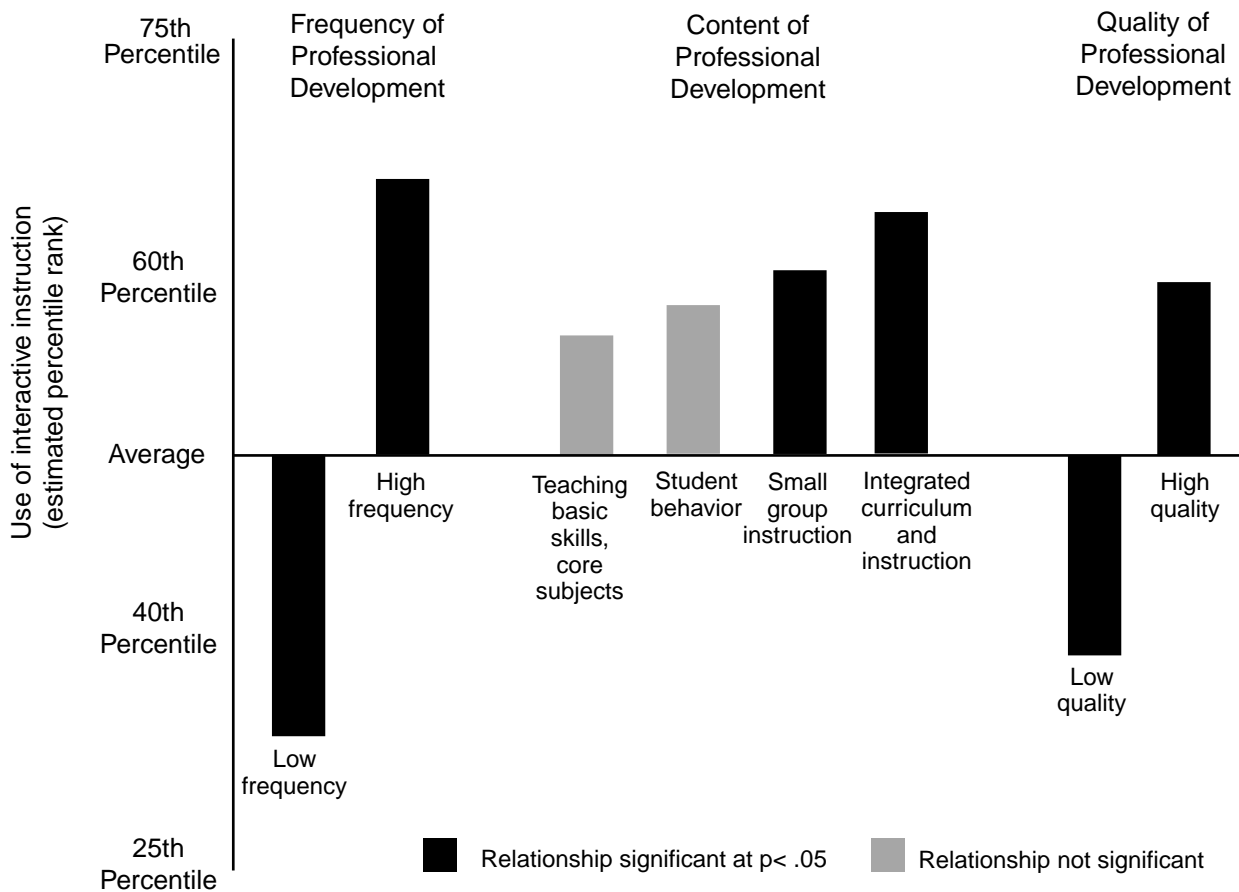
Our measure of school orientation toward innovation assesses the degree to which teachers in a school are continually learning, seeking new ideas, and trying to improve their teaching. This measure is composed of items on the 1997 and 1999 surveys asking about the:

- Proportion of teachers in the school willing to take risks to make their school better.
- Proportion of teachers in the school eager to try new ideas.
- Extent to which teachers in the school have a “can do” attitude.
- Extent to which all teachers in the school are encouraged to “stretch and grow.”
- Extent to which teachers in the school are continuously learning and seeking new ideas.
- Proportion of teachers in the school who are really trying to improve their teaching.

The internal reliability coefficients for this measure are 0.86 for 1997 and 0.89 for 1999.

Figure 2

Relationships of Elements of Professional Development to Teachers' Use of Interactive Instruction Methods



High quality and low quality are defined as one standard deviation above and below the mean. High frequency and low frequency are also defined this way. Percentiles are estimated from the standard deviation of interactive instruction.

teaching refers to teachers' use of whole class presentation, recitation, and individual student work to transmit specific knowledge and skills. Also as mentioned earlier, other research conducted by the Chicago Annenberg Research Project has found teachers' use of interactive teaching to produce greater short-term increases in student achievement on the ITBS than didactic teaching. At the same time, we argued that teachers use combinations of strategies. While our current evidence points to the effectiveness of increased use of interactive instruction, we considered it important to examine the impact of professional development on teachers' use of didactic instruction as well.

We found statistically significant, positive relationships between the frequency, content, and quality of professional development and teachers' use of interactive teaching methods (see Figure 2). Teachers who participate more frequently in professional development make greater use of interactive teaching methods than teachers on average and at a much greater rate than teachers who participate in professional development infrequently. The content of teachers' professional development is also associated with their use of interactive instructional techniques. Teachers who received 15 or more hours of professional development in small group instructional strategies or integrated curriculum and instruction were more likely

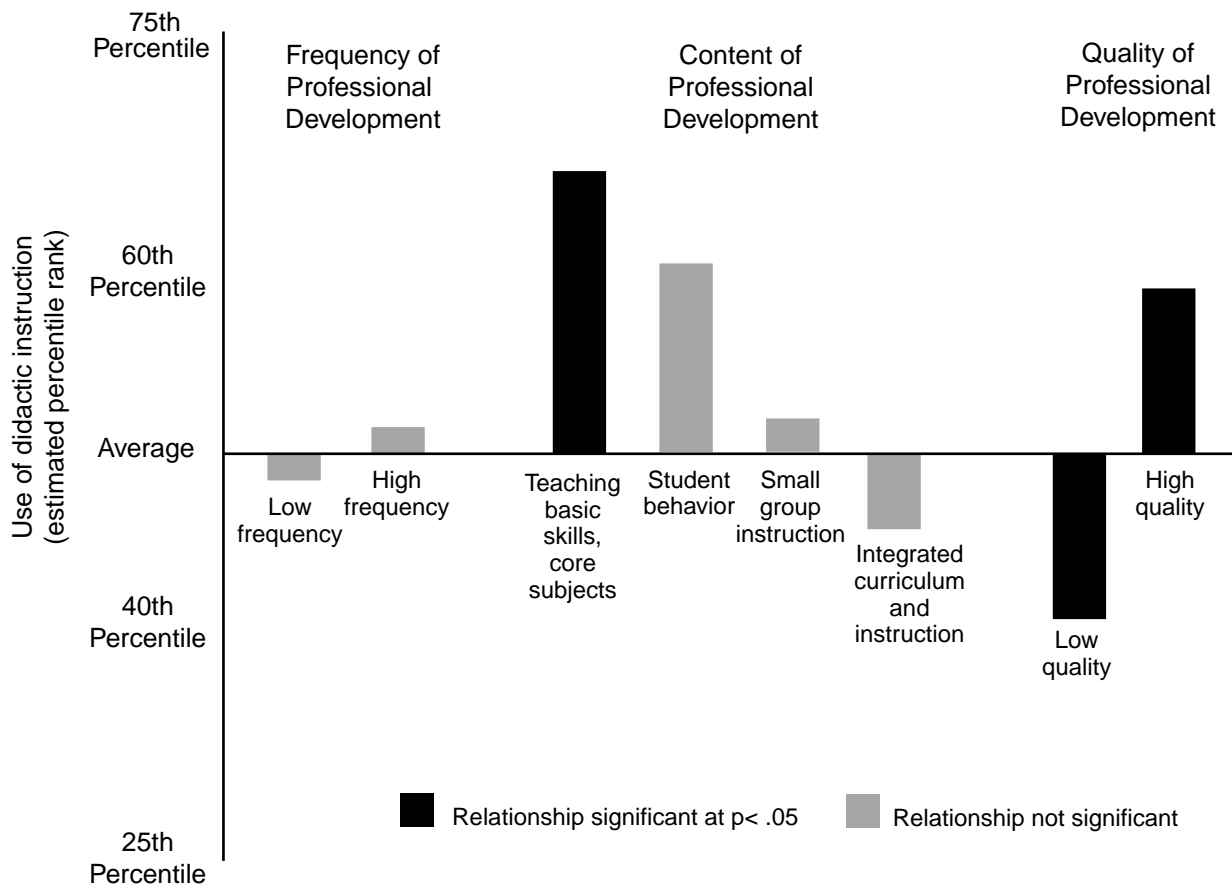
to use interactive instructional approaches than average. Finally, higher quality professional development processes are associated with greater use of interactive teaching methods. Like participation, teachers who experience the higher quality professional development used interactive practices at a greater rate than average and at a much greater rate than teachers who experience the low quality professional development.

In contrast, we found no significant relationship between the frequency with which teachers participate in professional development and their use of didactic teaching methods (see Figure 3). Teachers who participate frequently in professional development activities are no more likely than teachers who rarely participate to use didactic teaching in their classrooms.

On the other hand, we found that teachers' exposure to professional development in teaching basic skills and core academic subjects is related at statistically significant levels to their use of didactic methods. Their exposure to professional development in student behavior and management was also positively related to their use of didactic teaching, but not at a statistically significant level. There is virtually no relationship between teachers' exposure to professional development in small group instruction and integrated curriculum and instruction, and their use of didactic instruction. Finally, we found a statistically significant, positive relationship between professional development quality and didactic instruction.

Figure 3

Relationships of Elements of Professional Development to Teachers' Use of Didactic Teaching Methods



High quality and low quality are defined as one standard deviation above and below the mean. High frequency and low frequency are also defined this way. Percentiles are estimated from the standard deviation of didactic instruction.

We can look across the findings of these separate analyses and argue that teachers' use of interactive instruction is promoted by frequent participation in high quality professional development that is focused on content related to interactive teaching. Likewise, we can argue that teachers' use of didactic instruction is promoted by participation in high quality professional development focused on content related to didactic teaching. The key here seems to be engaging teachers in particular content through professional development processes characterized by sustained, coherent study; collaborative learning; time for classroom experimentation; and follow-up. In general, our findings suggest that the quality of professional development processes themselves can promote different types of instruction. What seems to promote teachers' use of one instructional approach rather than another is the content of professional development that is delivered through these processes. Finding that frequency of participation in professional development matters more for teachers' use of interactive instruction than their use of didactic instruction suggests that more time may be needed for teachers to develop and use more frequently some teaching practices than others. Perhaps the complexities of interactive instruction require more frequent participation to promote greater use. Perhaps more frequent participation is needed for a teacher to use either interactive or didactic methods more effectively.

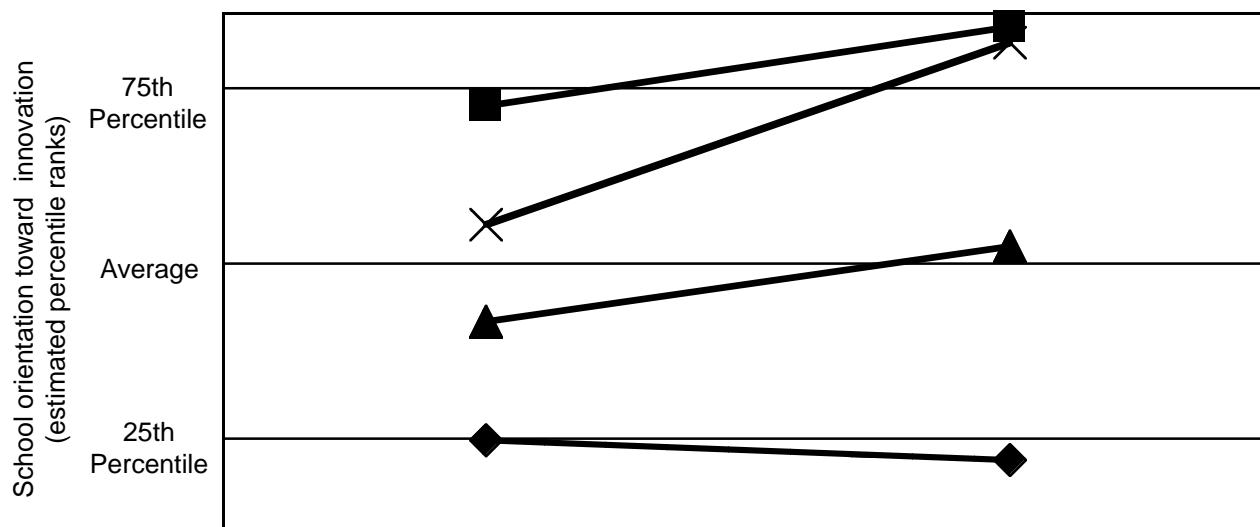
Because these analyses are cross-sectional, it is important to note the relationships we found may indicate not only that professional development influences instruction, but also that teachers who teach in particular ways may choose to participate in particular types of professional development activities. It is possible that teachers who make substantial use of interactive teaching practices choose high quality professional development experiences over low quality experiences, or select professional development focused on small group instruction, integrated curriculum and instruction, or other topics related to the way they currently teach. It is also possible that teachers who make extensive use of didactic instruction choose professional development in some topics over others. That said, professional development con-

tent that is aligned with teachers' current instructional practices can encourage teachers to employ these practices more often and more effectively.

Impact on School Orientation Toward Innovation

Our analyses also revealed positive relationships between professional development quality and school orientation toward innovation. As shown in Figure 4, there are positive cross-sectional relationships between professional development quality and orientation toward innovation. In 1997, the higher the quality of professional development, the greater the orientation toward innovation. Average quality professional development is associated with average levels of orientation in 1997 (the middle two marks for 1997), while low quality is associated with low orientation (the bottom mark for 1997). Schools with high quality professional development had much higher orientation than average (the top mark for 1997). Furthermore, schools in which teachers reported higher quality professional development in 1997 also showed increases in orientation toward innovation during the next two years (holding constant any change in professional development quality). Schools in which teachers reported low quality professional development in 1997 showed a slight decline in orientation toward innovation. These relationships are shown by the top and bottom lines in Figure 4. These lines represent schools that had either low or high quality professional development in 1997 and showed no change in that quality from 1997 to 1999, which was average for the system (see Section IV). Orientation toward innovation also increased much more in schools whose teachers reported improving professional development quality than in schools whose teachers reported declining quality. These relationships are shown by the two middle lines in Figure 4. These lines show the difference in improvement in orientation toward innovation between schools with improving professional development quality and schools with declining professional development quality over the same period, when these groups of schools start off with close to the same initial levels of quality.

Relationships of Professional Development Quality to School Orientation Toward Innovation



- High quality professional development in 1997, with no change in quality between 1997 and 1999.
- × Average quality professional development in 1997, improving between 1997 and 1999.
- ▲ Average quality professional development in 1997, declining between 1997 and 1999.
- ◆ Low quality professional development in 1997, with no change in quality between 1997 and 1999.

School orientation toward innovation is calculated from a statistical model with all of the professional development variables, as well as demographic variables, entered as predictors. The 75th and 25th percentile estimates are calculated using the standard deviation of mean school innovation in 1997, based on an assumption of normal distribution. High quality professional development in 1997 are those schools at the 75th percentile in professional development quality. Low quality professional development in 1997 are those schools at the 25th percentile in professional development quality. Improving quality are those schools at the 75th percentile in change in professional development quality. Those schools experienced substantive improvements in the quality of their professional development. Declining quality are those schools at the 25th percentile in change in professional development quality. These schools experienced substantial declines in the quality of teacher professional development. Initial differences in orientation toward innovation among schools with average quality of professional development are due to a reciprocal relationship with school orientation toward innovation where improvement in professional development quality is associated positively with initial levels of orientation toward innovation.

The relationship of frequency of professional development to school orientation toward innovation is not as strong. Schools in which teacher participation in professional development increased between 1997 and 1999 also showed increased orientation toward innovation during the same period. However, higher participation in professional development in 1997 was not significantly related to increases in orientation toward innovation over the next two years.

These findings suggest that the quality of professional development may have a longer lasting impact

on school orientation toward innovation than the amount of time that is dedicated to it. High quality professional development may promote a teacher's desire to continue to learn, try new ideas, and seek to improve their teaching. In turn, this may promote teachers' ongoing pursuit of high quality professional development. We discuss this further in the section below that examines school organizational supports for effective professional development.

Discussion

Our findings indicate that professional development is related positively to classroom instruction. Frequent participation in professional development, the quality of professional development processes, and exposure to integrated curriculum and instruction, and small group teaching techniques are associated with teachers' use of interactive instruction.³⁷ High-quality professional development processes and professional development content focused on teaching basic skills and core subjects (and perhaps student behavior and management) are associated with teachers' use of didactic instruction. Coupling these findings with those of research we have conducted on instruction and achievement,³⁸ we can point to a chain of evidence that suggests that greater student learning can be achieved with increased use of interactive instruction which, in turn, can be promoted by frequent teacher participation in high quality professional development focused on integrated curriculum and instruction, and small group instructional techniques. Other foci for professional development might also promote interactive instruction, but among those areas of professional development studied, only these two are associated with increased use of interactive instruction.

Our findings also show that high-quality teacher professional development processes can promote school orientation toward innovation. Professional development that is sustained, coherently focused, and followed-up; that addresses needs of students and relates to their schools' improvement plans; that provides time to experiment with and evaluate new ideas in the classroom; and that provides teachers with opportunities to interact, prompts them to learn and experiment more to improve their practice. High-quality professional development helps build continued improvement; learning begets more learning and innovation. The strong relationship of professional development quality to both instruction and orientation toward innovation, independent of the frequency with which teachers participate in it, highlights the need to look beyond the amount of time teachers spend in professional development to the manner in which they are engaged. At the same time, we should not discount the need for frequent exposure to professional development to meet some improvement objectives. These analyses suggest that promoting the effective use of complex teaching strategies, such as interactive instruction, may require that more time be invested in professional development.

IV. The Professional Development of Chicago's Teachers, 1997-1999

In this section, we present a profile of professional development experienced by Chicago's teachers between 1997 and 1999, and compare the professional development experienced by different groups of Chicago teachers. We focus on two elements of professional development—how often teachers participate in professional development and the pedagogical quality of that professional development.

We also examined Chicago teachers' exposure to professional development in four topic areas: integrated curriculum and instruction, small group teaching techniques, teaching basic skills and core subjects, and student behavior and classroom management. We found that relatively small proportions of teachers in the system had much exposure to the first two of these professional development topics during the 1997 school year. About 14 percent of teachers had 15 or more hours of professional development in integrated curriculum and instruction and about 18 percent had 15 or more hours of professional development in small group instruction. Between 35 and 40 percent of teachers had 15 or more hours of professional development in teaching basic skills and core subjects, and about 16 percent in student behavior and management. While the amount of exposure teachers have to particular professional development content varies, we focus here on the frequency and quality of teachers' professional development experiences, as these elements are applicable to all teachers regardless of the focus of their professional development.

Professional Development as an Individualistic Activity

It is important to mention that professional development in Chicago appears to be a largely fragmented and individualistic activity. On average, CPS teachers participate in professional development between

Professional Development as an Individualistic Activity

The 1997 and 1999 Consortium surveys asked teachers the extent to which they are left to seek out professional development on their own. In 1997, 27 percent of elementary teachers and 36 percent of high school teachers agreed or strongly agreed that teachers in their schools were left on their own to seek out professional development. In 1999, those proportions were somewhat smaller. Still, almost one-quarter of elementary school teachers and almost 30 percent of high school teachers reported that teachers in their schools must seek out their own professional development.

two and three times a month. Much of that activity occurs within teachers' own schools. At the same time, teachers draw on numerous other sources of professional development, and the content of their professional development often spans a wide variety of topics. Our analyses indicate that there are substantially greater differences in professional development experienced by teachers within the same school than there are by teachers among schools.³⁹ Moreover, as shown in the accompanying sidebar, substantial percentages of teachers report that they are left alone to find their own professional development.

Developing our Profile

We developed our profile of teacher professional development using teacher survey data from 1997 and 1999. In this profile, frequency of professional development refers to the number of professional development activities in which teachers participated per month. Professional development quality is measured on a 10-point scale on which minimal quality ranges from 1.0 to 2.3, low quality ranges from 2.3 to 4.3, moderate quality ranges from 4.3 to 7.0, and high quality ranges from 7.0 to 10.0.

Indicators of these four levels of quality are shown in Figure 5. High quality is defined by teacher reports that their overall professional development experiences are characterized positively by (a) a relationship between their professional development and their school's improvement plan; (b) a relationship to students' needs; (c) sustained and focused

activity; (d) opportunities to work with teachers at one's own school; (e) enough time to think about, try, and evaluate new ideas; (f) follow-up activities; and (g) opportunities to work with teachers from other schools. With high quality professional development, teachers are not left alone to seek out their own learning. Moderate quality professional development contains several positive features of high quality professional development, but may also have some important weaknesses. In particular, teachers who experience moderate quality may lack adequate time to apply new ideas in their classrooms and may lack follow-up activities. They may also lack opportunities to work with teachers from different schools. Low quality professional development is defined by a general negative characterization that professional development lacks relationship to teachers' school improvement plans, is not related to students' needs, is not sustained or focused, and does not provide opportunities to work with other teachers at one's own school. Low quality professional development is also defined by more definitive negative characterization that it lacks time for application, follow-up, and opportunity to work with teachers from other schools. Teachers who experience low quality professional development also report being left alone to find their own learning opportunities. Finally, minimal quality professional development is defined by a strong negative characterization that professional development definitely does not reflect these qualities, and that teachers are left alone to pursue their own learning.

We examined the characteristics of teacher professional development across the school system. Then, we compared characteristics of professional development experienced on average by elementary and high school teachers, and beginning and experienced teachers. We also looked at differences in the professional development experienced by teachers working in schools with different levels of student achievement, different proportions of low-income students, different racial and ethnic compositions, and schools of different sizes.⁴⁰

As shown below, we found substantial differences in professional development experienced by elementary and high school teachers, making system-wide averages not very useful. So, we begin this section by comparing the professional development experienced by elementary teachers to the professional development experienced by high school teachers. Then, considering elementary and high school teachers as separate groups, we examine the professional development experienced by beginning and veteran teachers, and by teachers working in demographically different schools. Finally, we discuss the implications of differences in professional development experienced by these different groups of teachers.

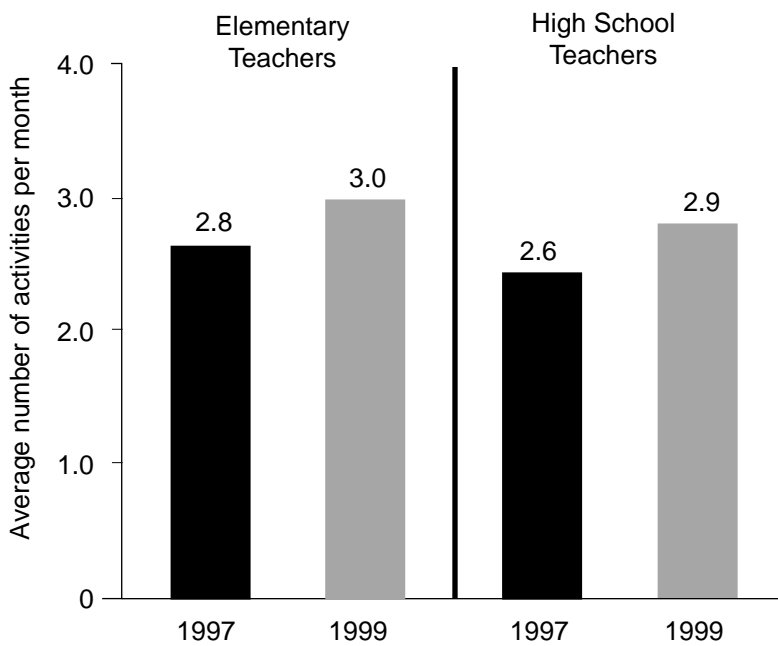
Indicators and Levels of Pedagogical Quality

Indicators of Quality	Levels of Quality			
	Minimal (1.0-2.3)	Low (2.3-4.3)	Moderate (4.3-7.0)	High (7.0-10.0)
Connected to school improvement plan	--	-	+	+
Related to students' needs	--	-	+	+
Sustained and focused	--	-	+	+
Provides opportunity to work with teachers at own school	--	-	+	+
Provides enough time to think, try, and evaluate ideas	--	--/-	-/+	+
Followed up	--	--/-	-/+	+
Provides opportunity to work with teachers from other schools	--	--/-	-/+	+
Teachers left on own for professional development	+	+	-	-

- + Teacher agrees that indicator characterizes overall professional development.
- /+ Is as likely to disagree as agree with characterization.
- Disagrees with characterization.
- /- Is as likely to strongly disagree as disagree with characterization.
- Strongly disagrees with characterization.

Figure 6

Teacher Participation in Professional Development Activities Elementary and High School Teachers, 1997 and 1999



Elementary and High School Teachers

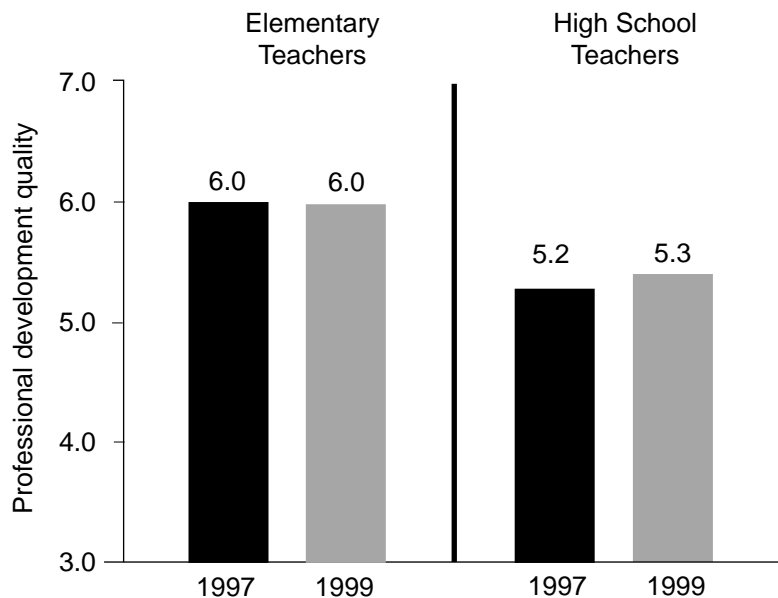
Elementary and high school teachers participated in professional development at similar rates in both 1997 and 1999. Both groups also participated in professional development slightly more, on average, in 1999 than in 1997. As shown in Figure 6, elementary teachers participated in professional development an average of 2.8 times a month in 1997, and 3.0 times a month in 1999, while high school teachers participated 2.6 times a month in 1997 and 2.9 times a month in 1999.

While elementary and high school teachers participated in professional development with similar frequency, the pedagogical quality of their experiences differed (see Figure 7). In both 1997 and 1999, the quality of professional development experienced by elementary school teachers was higher than that experienced by high school teachers. For neither elementary nor high school teachers system-wide did the average quality of professional development improve in any substantial way between 1997 and 1999.

On the other hand, when we looked at 1997 and 1999 distributions of teachers experiencing different levels of professional development quality, we saw a shift among elementary and high school teachers toward higher quality. As shown in Figure 8, the proportion of elementary teachers experiencing high-quality

Figure 7

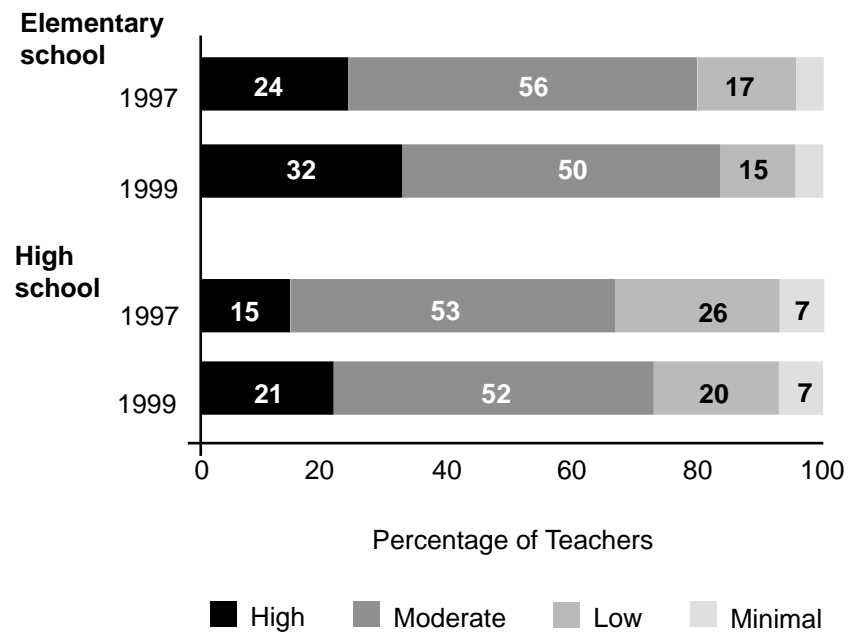
Quality of Professional Development Elementary and High School Teachers, 1997 and 1999



Professional development rose from about 24 to 32 percent between 1997 and 1999, while the proportion of teachers experiencing minimal or low-quality professional development quality fell from 20 to 18 percent and the proportion of teachers experiencing moderate quality fell from 56 to 50 percent. Similarly, the proportion of high school teachers experiencing high-quality professional development rose from about 15 to 21 percent between 1997 and 1999, while the proportion of teachers experiencing minimal or low quality fell from about 33 to 27 percent.⁴¹

These data are encouraging in that they point to small increases in the quality of professional development experienced by both elementary and high school teachers. Still, they show a continuing disadvantage for high school teachers. It is also encouraging to find that somewhat more than half of CPS teachers experience moderate-quality professional development. These moderate quality experiences are characterized by a number of positive elements, such as opportunities to work with other teachers in one's own school, sustained and focused activity, relationship to students' needs, and a connection to one's school improvement plan. On the other hand, these experiences may also lack key elements that may compromise the effectiveness of professional development, including lack of follow-up activities and insufficient time for

Percentages of Elementary and High School Teachers Experiencing Different Levels of Professional Development Quality 1997 and 1999



Quality is measured on a scale of 1 to 10 where Minimal = 0 to 2.3, Low = 2.3 to 4.3, Moderate = 4.3 to 7.0 and, High = 7.0 to 10.0. Average quality for elementary teachers is 5.98 in 1997 and 5.99 in 1999. Average quality for high school teachers is 5.23 in 1997 and 5.33 in 1999.

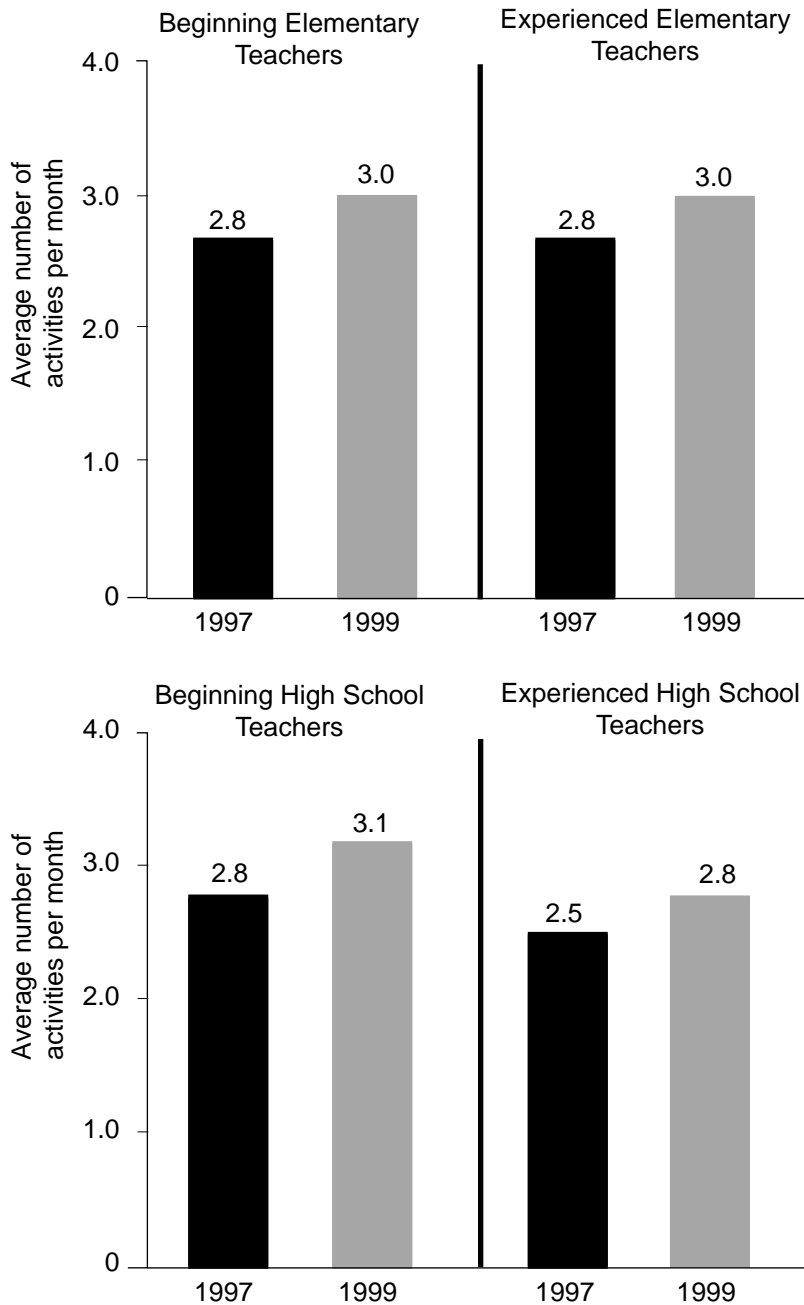
teachers to think about, try, and evaluate new ideas in their classrooms. When considered with teachers who experience low and minimal quality professional development, about three-quarters of teachers in the system may experience professional development that has such weaknesses.

Beginning and Experienced Teachers

We might think that inexperienced teachers would benefit from more frequent participation in high quality professional development than experienced teachers. We find that beginning elementary school teachers—those with one or two years of experience—participate in professional development at the same rate as experienced elementary teachers with three or more years of experience (see Figure 9). Both beginning and experienced elementary teachers participated in professional development at an average rate of 2.8 times a month in 1997 and 3 times a month in 1999. In 1997, beginning high school teachers participated in professional devel-

Figure 9

Teacher Participation in Professional Development Activities
Beginning and Experienced Elementary and High School Teachers, 1997 and 1999



Beginning teachers have 1-2 years of experience. Experienced teachers have 3 or more years of experience.

opment with greater frequency than their more experienced colleagues. In 1999, rates of participation increased for both groups of high school teachers.

While rates of participation in professional development were similar for beginning and veteran elementary teachers, these two groups of teachers experienced different quality professional development (see Figure 10). In 1997, beginning elementary teachers experienced lower-quality professional development than their veteran colleagues. These differences persisted in 1999. Beginning and veteran high school teachers experienced similar professional development quality in 1997. By 1999, however, the quality of professional development experienced by beginning high school teachers had increased so that it had become higher than the quality experienced by veteran high school teachers.

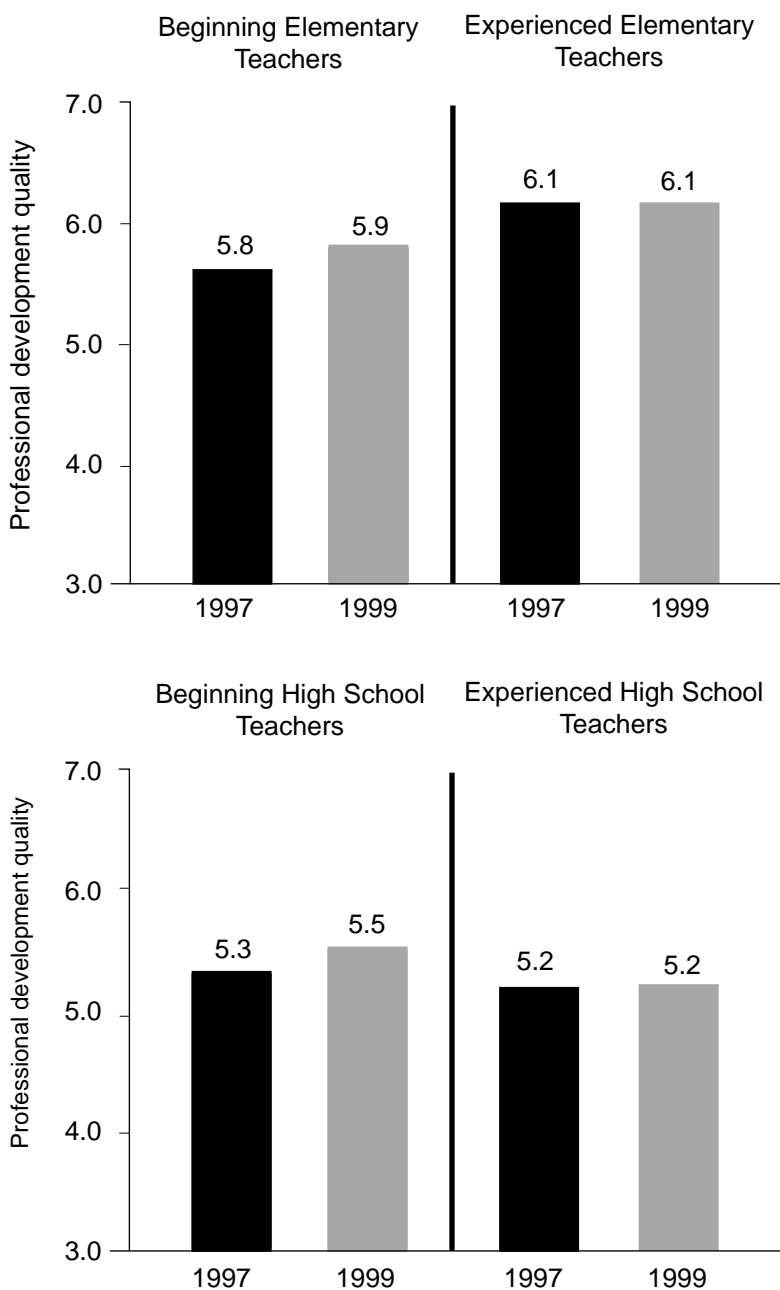
Differences by School Characteristics

We also wanted to learn if teachers in schools which differed demographically experienced different types of professional development. The demographic characteristics we considered were (a) student achievement (as defined by proportion of students scoring at or above national norms on the Iowa Tests of Basic Skills); (b) racial and ethnic composition; (c) percent_

age of low-income students attending the school; and (d) total student enrollment. After separating elementary and high school teachers, we found no statistically significant differences in professional development experienced among teachers in schools of different racial and ethnic compositions, or with different concentrations of low-income students.⁴² This indicates that teachers in schools serving large proportions of low-income students are as likely as teachers in schools serving smaller proportions of low-income students to participate in professional development with similar frequency and experience professional development of similar quality. Teachers are neither advantaged or disadvantaged in their professional development if they teach in predominantly African-American, predominantly Latino, mixed minority, or integrated schools. We did find significant differences, however, in professional development experienced among teachers in schools of different achievement levels and sizes of enrollment. We discuss these differences below.

School Achievement. Teachers working in low-achieving schools may feel a greater need for and participate more often in professional development than other teachers. Our data suggest that this is the case. In 1997, teachers who taught in the system's lowest-achieving elementary schools

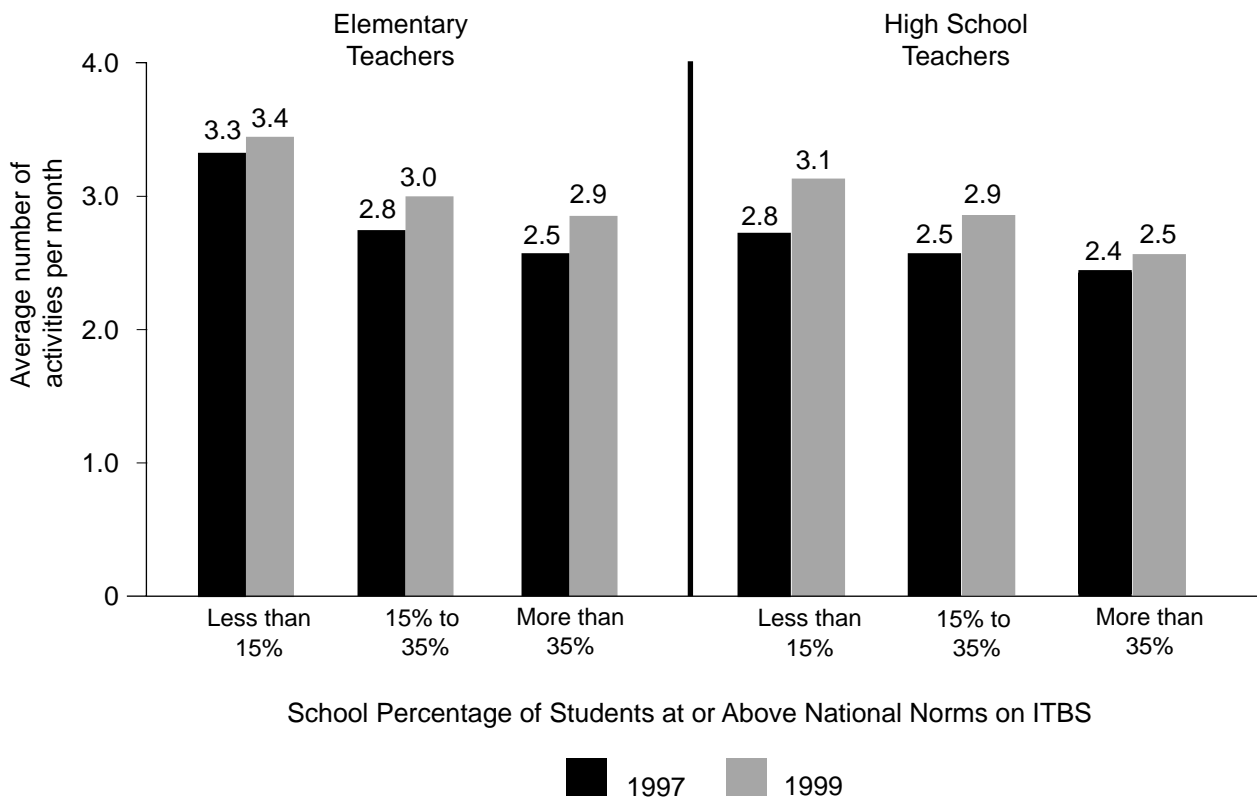
Quality of Professional Development Beginning and Experienced Elementary and High School Teachers, 1997 and 1999



Beginning teachers have 1-2 years of experience. Experienced teachers have 3 or more years of experience.

Figure 11

Teacher Participation in Professional Development Activities by Level of School Achievement
Elementary and High School Teachers, 1997 and 1999

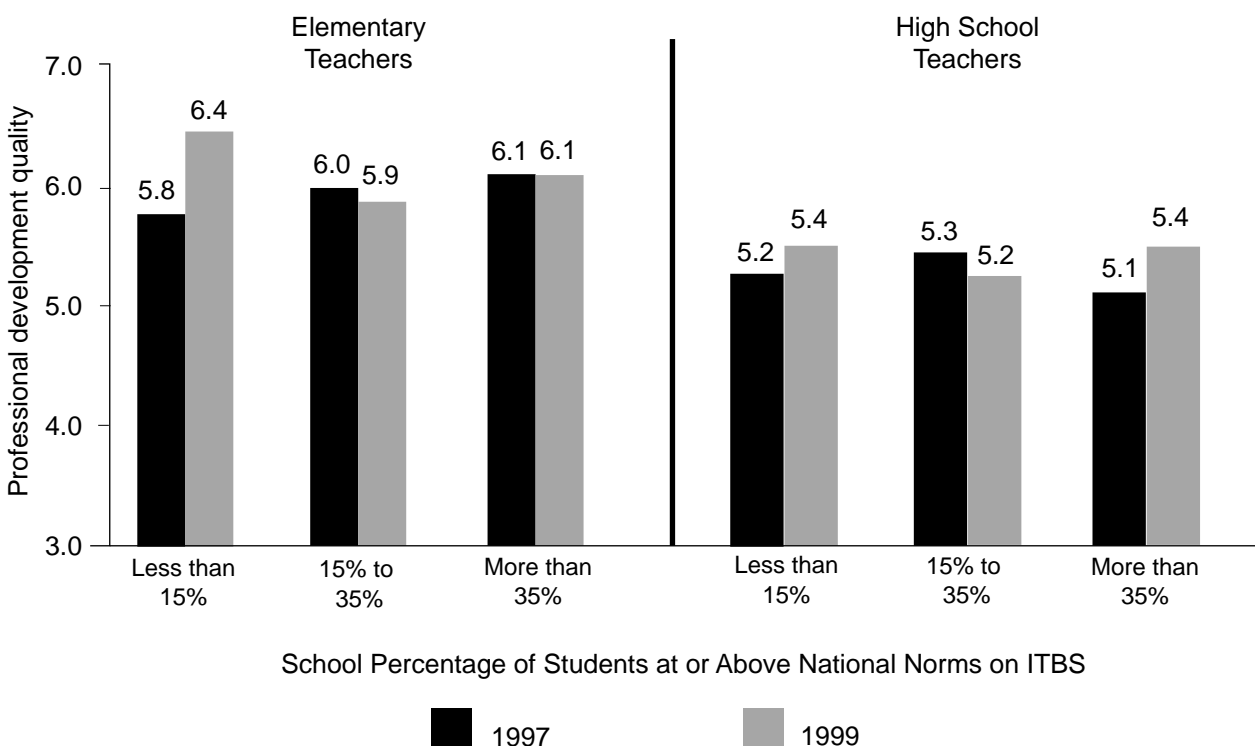


(schools with less than 15 percent of their students achieving at or above national norms on the ITBS) participated in professional development activity at higher rates than teachers in other elementary schools (see Figure 11). That year, teachers in the lowest-achieving elementary schools participated in professional development on an average of 3.3 times per month. Teachers in elementary schools with between 15 and 35 percent of their students at or above national norms participated at an average rate of 2.8 times per month, and teachers in elementary schools with more than 35 percent of their students at or above national norms participated at an average rate of 2.5 times per month. By 1999, rates of participation had increased among schools in each achievement cat-

egory. Similar changes were found among teachers who worked in high schools with different levels of student achievement.

Our findings concerning the quality of professional development in lower- and higher-achieving schools follow a different pattern (see Figure 12). In 1997, teachers in the lowest-achieving elementary schools experienced the lowest quality of professional development, while teachers in the highest-achieving elementary schools experienced the highest quality professional development. In 1999, professional development quality remained virtually the same in elementary schools with the exception of the system's lowest-achieving schools. In the lowest-achieving elementary schools, professional development quality

Quality of Professional Development by Level of School Achievement Elementary and High School Teachers, 1997 and 1999



rose to a point where in 1999 it was greater than the quality experienced by teachers in higher-achieving schools. The quality of professional development experienced by high school teachers in low, medium, and higher-achieving schools changed only slightly between 1997 and 1999.

Improvement in the quality of professional development experienced by teachers in low-achieving elementary schools is encouraging, and may have occurred because the system has focused greater resources on its lowest-achieving schools at the elementary level. New resources have come from a number of places, notably the system's school probation policy and the Chicago Annenberg Challenge. Later in this report, we examine in more detail professional development experienced by teachers in probation and Annenberg schools. The very modest change in pro-

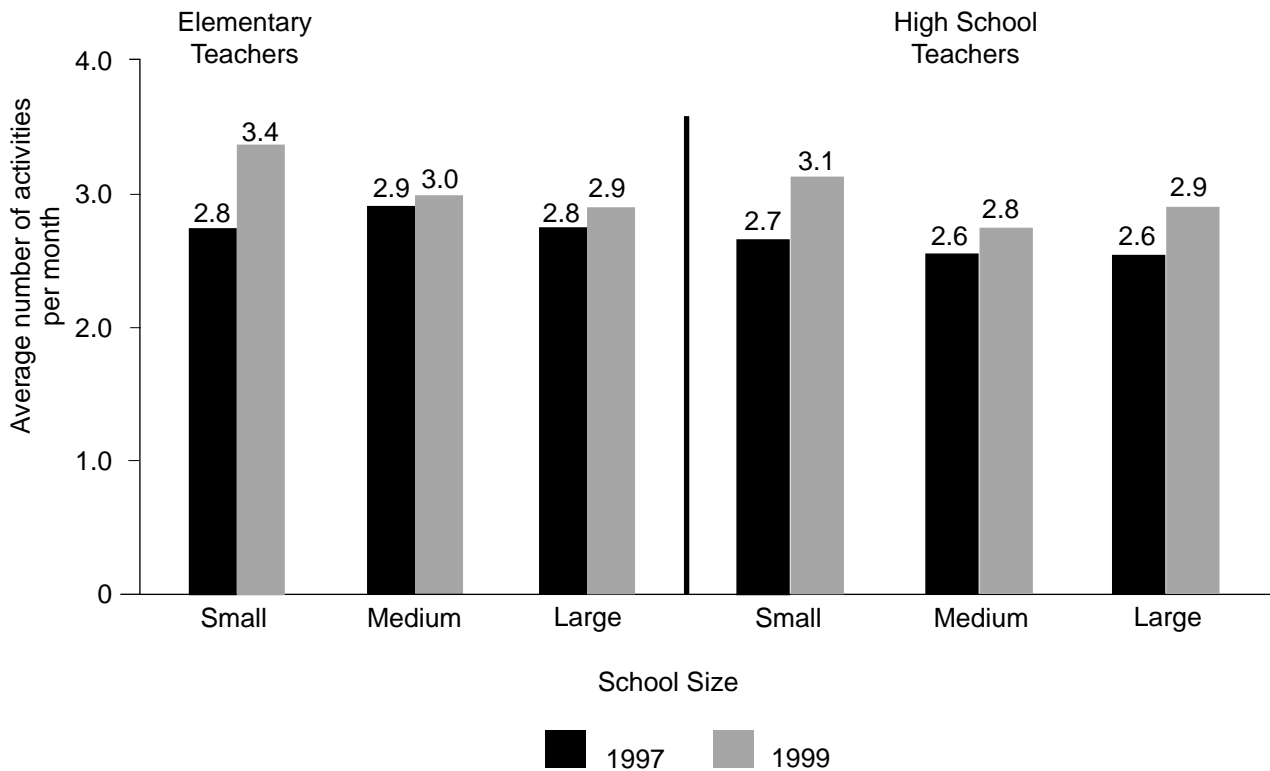
fessional development quality at the high school level suggests a need for more attention to professional development there.

School Size. Our findings indicate that professional development experiences of teachers working in small elementary and high schools are different than professional development experiences of teachers who work in medium and large schools. We define small elementary schools as those with fewer than 350 students. Medium elementary schools enroll between 350 and 699 students, and large schools more than 700 students. We define small high schools as those with fewer than 1,200 students. Medium high schools enroll between 1,200 and 1,800 and large high schools enroll more than 1,800 students.

Elementary teachers in small schools have come to participate in professional development at a higher

Figure 13

Teacher Participation in Professional Development Activity by School Size
 Elementary and High School Teachers, 1997 and 1999



Size of elementary schools is defined as Small = less than 350 students, Medium = 350 to 699 students, Large = more than 700 students. Size of high schools is defined as Small = less than 1,200 students, Medium = 1,200 to 1,800 students, Large = more than 1,800 students.

rate than elementary teachers in medium and large schools (see Figure 13). Teachers in small high schools participated at a similar rate as teachers in medium and large high schools in 1997, but their rates of participation increased by 1999.

The factor that most distinguishes professional development experienced by teachers in small elementary schools from that experienced by teachers in medium and large elementary schools is quality. As shown in Figure 14, the quality of professional development experienced by teachers in small, medium, and large elementary schools differed slightly in 1997. By 1999, the quality of professional development increased for elementary teachers in small schools so that it had become even greater than quality experi-

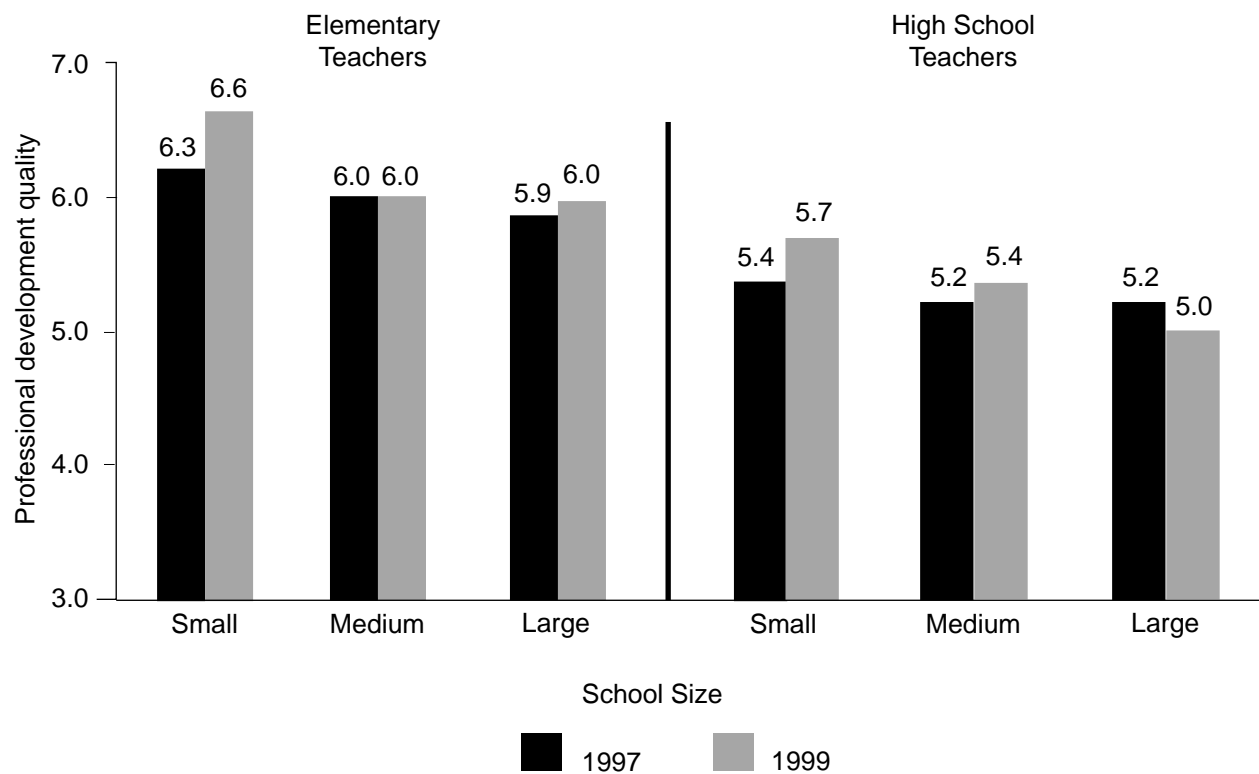
enced by teachers in medium and large schools. Like elementary teachers, teachers in small high schools experience higher-quality professional development than teachers in medium or large high schools. Between 1997 and 1999 small high schools had increased their advantage over medium and large high schools.

Discussion

While professional development experienced by most Chicago Public School teachers is of moderate quality, with both strengths and weaknesses, there is some evidence that larger proportions of teachers are experiencing higher quality now than in 1997. In addition, the frequency with which teachers participate in professional development has increased. Given the shift

Quality of Professional Development by School Size

Elementary and High School Teachers, 1997 and 1999



Size of elementary schools is defined as Small = less than 350 students, Medium = 350 to 699 students, Large = more than 700 students. Size of high schools is defined as Small = less than 1,200 students, Medium = 1,200 to 1,800 students, Large = more than 1,800 students.

toward more frequent participation and improving quality, we are hopeful that professional development will be an increasingly effective mechanism for both school improvement and improvement of classroom instruction.

Improvement in professional development is particularly noteworthy among some groups of Chicago teachers. For example, there have been noticeable increases in professional development participation and quality among teachers working in Chicago's lowest-achieving schools. Teachers who work in small schools are also participating with greater frequency in relatively higher-quality professional development.

At the same time, some groups of teachers who may need the strongest support from high quality pro-

fessional development seem to get less of it. As a whole, high school teachers experience lower-quality professional development than elementary teachers. The quality of professional development experienced by beginning elementary teachers remains lower than the quality of professional development experienced by more experienced elementary teachers. Finally, teachers who work in large schools participate in professional development at lower rates, and experience professional development of lower quality. So, while overall trends in professional development point to slight improvement, the experiences of different groups of teachers are uneven, with some groups experiencing significantly better professional development than others.



John Booz

V. Providing Effective Professional Development to Teachers

Opportunities for teacher professional development come from a number of different sources. They can be provided by a teacher's own school. They can be provided by the school system, or by a variety of external organizations working formally or informally with schools or groups of teachers to promote improvement. These organizations include colleges and universities, teacher networks, professional organizations, teacher unions, local and regional educational service organizations, and individual consultants.

The overall effectiveness of professional development is determined in large part by the intellectual, normative, financial, and material resources internal and external providers bring. Effectiveness is also influenced by the scope of their efforts and the means by which professional development is “delivered” to teachers. The literature on teacher professional development distinguishes between professional development that is school-based and professional development that originates outside the school. It distinguishes between professional development that is planned and developed by teachers, and professional development that is planned by administrators and outside experts. It also distinguishes between mandatory and voluntary professional development, and professional development that aims to involve whole faculties or just small groups of teachers. According to the literature, professional development that is planned by external experts and provided to teachers on a mandatory basis is less likely to engage teachers and affect their practice than professional development that is planned by or with teachers, is school-based, and is provided on a voluntary basis.⁴³ Professional development that involves a large proportion of teachers and administrators is more likely to promote school improvement than professional development that involves only a small proportion of teachers and depends on those teachers to act as agents of improvement for the whole school.⁴⁴

We did not attempt a comprehensive study of the “supply side” of teacher professional development in Chicago. The large number of providers working in the system makes such a study a near impossible undertaking. In the introduction to this report, we highlighted some of the major programs that provide professional development to Chicago’s teachers. In this section we examine the characteristics of teacher professional development associated not with individual programs but with general sources. These sources include school-based activity, teacher networks, professional groups external to the school, CPS workshops, and activities sponsored by the teachers union. We also examine professional development associated with probation and with participation in the Chicago Annenberg Challenge, two major sources of professional development in the system.

Our sense from this study and from previous research is that the relationship of numerous professional development providers to teachers and schools in Chicago is driven as much by market forces as by any strategic effort to align professional development resources with the particular needs of teachers or coherent goals for school improvement,⁴⁵ a pattern which has been seen in school districts across the country.⁴⁶

In Chicago, movement toward market-oriented professional development can be traced back at least to the 1988 decentralization reform. From the 1950s through the 1980s, most professional development in school districts across the United States was provided or at least coordinated by the central office.⁴⁷ Chicago was little different.⁴⁸ But, as Elizabeth Duffrin, a writer for *Catalyst*, observed in her recent analysis of professional development in Chicago, “[W]ith the reduction of the central bureaucracy under [the 1988] school reform, schools [began to turn] to outside consultants for staff development.”⁴⁹ This shift was promoted by a weak central office, coupled with new mandatory local school improvement planning processes and school-based budgeting authority that allowed community groups and university-based organizations to work directly with schools as paid consultants and service providers. This shift was also promoted by local foundations and central office initiatives which sought to link low-perform-

ing schools with external organizations as sources of improvement.⁵⁰

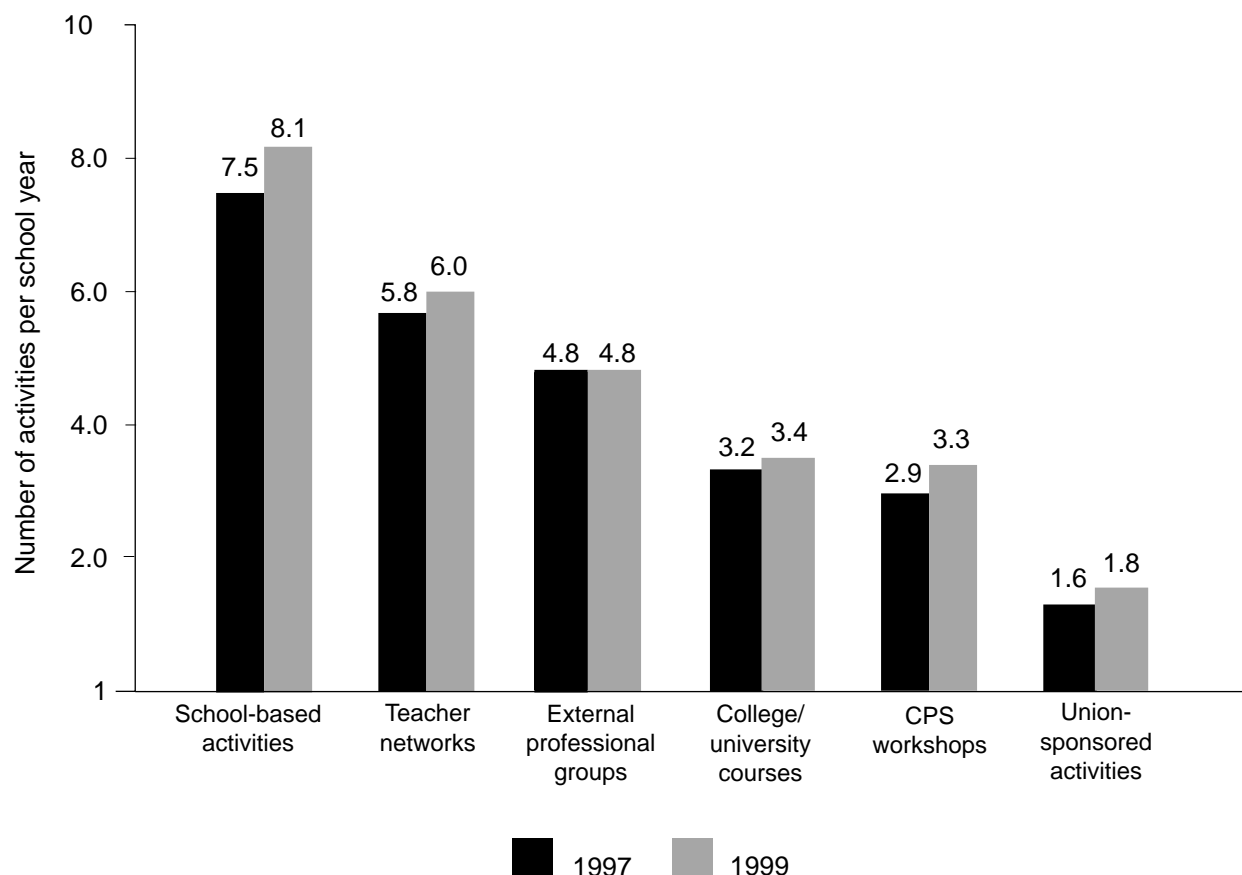
Since 1995, the central administration has relied extensively on outside agents to support local school improvement. The administration has sought to stimulate the “supply side” by encouraging greater numbers of organizations to support teacher professional development and school improvement.⁵¹ An important focus of this effort has been the system’s school probation policy. The central office assigns external probation managers to work with the systems’ lowest-achieving schools and to chart their course for improvement. Under this initiative, the system is “purchasing” an array of services from a large market of providers that one way or another are expected to help schools improve and increase student achievement.

Perhaps the other single largest source of professional development is the Chicago Annenberg Challenge. Like probation policy, the Challenge seeks to link schools with external partners who may serve as sources of teacher professional development and school improvement. There are significant differences between probation policy and the Annenberg Challenge as means of delivering professional development, and these differences will be explored later in this section. However, the Challenge is similar to probation policy in that by extending grants competitively and selectively to external partners it, too, draws upon and stimulates a large market of providers. Efforts like probation and the Chicago Annenberg Challenge bring crucial resources to schools that support teacher development and promote school improvement. Problems can arise, however, if the quality and performance of outside providers are not assured by anything but the market. Sole reliance on market controls can leave professional development vulnerable to “intellectually shallow, gimmicky, or simply wrong” learning opportunities for teachers.⁵²

A General Assessment of Sources

The 1997 and 1999 Consortium surveys asked teachers to report the frequency with which they participated in professional development associated with six

Teacher Participation in Professional Development Activities by Source of Activity 1997 and 1999



general sources: (a) activities organized by teachers' own schools; (b) workshops and courses sponsored by CPS; (c) activities sponsored by the Chicago Teachers Union; (d) networks of teachers outside a teacher's own school; (e) activities of other external professional groups or organizations; and (f) courses offered by colleges or universities. We can readily assess the frequency with which teachers participated in professional development activities associated with each of these sources. It is more difficult to assess the quality of professional development associated with any one of these sources because the surveys only assessed quality of teachers' "overall professional development experience." We therefore examined the quality of professional development associated with different

sources indirectly by determining the average quality reported by teachers who also reported primary use of one source over others. Our assumption was that the more a particular source was used by a teacher, the more likely it was that a report of overall quality was associated with that source.

Frequency of Participation

As shown in Figure 15, Chicago teachers report that they participate most frequently in professional development organized by their own schools, followed by activities provided by teacher networks, and other external professional groups and organizations. Teachers participate least frequently in college and university courses, and in professional development provided

by CPS central office and the Chicago Teachers Union. The average rate of teacher participation in school-based professional development is almost three times greater than the average rate of participation in college and university coursework, and professional development sponsored by CPS central office. It is more than four times greater than participation in activities sponsored by the teachers' union. The relative frequency of teachers' participation in professional development provided by these various sources remained about the same in 1997 and 1999.

Some literature on professional development suggests that school-based professional development is most conducive to school and classroom improvement,⁵³ so to find that the average rate of participation in school-based activity is high relative to other sources of professional development is encouraging. However, bearing in mind the indicators we have that professional development tends to be fragmented and individualistic, it is possible that the prevalence of school-based activity simply means that there is a lot of unconnected professional development activity going on at the school level. If this were the case, it might not be as effective in promoting instructional improvement as professional development more coherently organized and linked to a larger program of instruc-

tional improvement.⁵⁴ Such an interpretation would be consistent with data from the 1999 survey, which found that 39 percent of elementary teachers and 55 percent of high school teachers agreed or strongly agreed with the statement "We have so many different programs in this school that I can't keep track of them all." In the words of a teacher in one of the Consortium's fieldwork schools:

Some Saturday mornings I can't remember which workshop I'm supposed to go to. I know it's a bad weekend when I'm supposed to be at two at once. Or what they tell us to do at one workshop is opposite of what was suggested at the last. In [my classroom], I just try out bits of each as best I can.⁵⁵

Quality of Professional Development

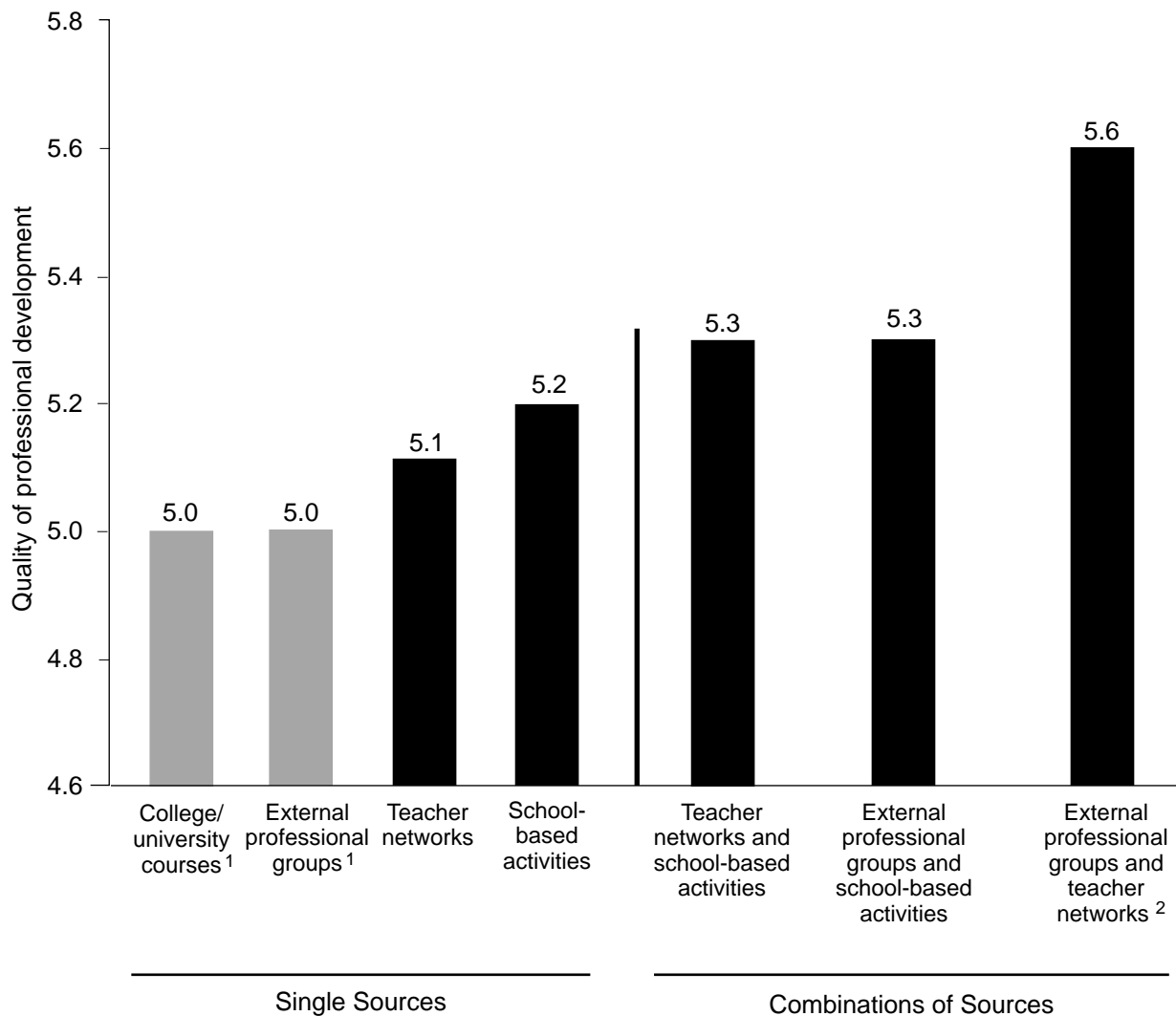
We sought to assess the quality of professional development provided by different sources by identifying groups of teachers who reported frequent participation in professional development from each source. This proved complicated. Teachers who participate frequently in professional development provided by one source are likely to participate frequently in professional development provided by other sources as well. So we expanded our focus to assess the quality of professional development associated with various combinations of sources as well as single sources.

The findings displayed in Figure 16 show that teachers who draw their professional development from particular combinations of sources report experiencing higher quality professional development than those who rely primarily on single sources of professional development. In particular, teachers who participate frequently in school-based activity and either activity supported by a teacher network or an external professional organization report higher-quality professional development experiences. Teachers who rely primarily on school-based activities



John Booz

Quality of Professional Development is Higher When Teachers Draw on a Combination of Sources



¹Quality of professional development associated with these single sources is significantly lower than the quality of professional development associated with the combination of external professional groups and school-based activities and the combination of external professional groups and teacher networks.

²The quality of professional development associated with this combination of sources is significantly higher than the quality of professional development associated with all single sources and other combinations of sources.

Probation Partners, 1999

In 1998-99, the most recent year of data for this report, 89 Chicago public schools were on academic probation. That year, 88 of these schools had probation partners. The probation partners serving these 88 schools are listed below in alphabetical order. Beside the name of each partner is the number of schools associated with that partner. Since the 1998-99 school year, about 45 schools have been removed from probation, leaving 44 remaining on probation at the time of this report.

• America's Choice/National Alliance for Restructuring Education	6
• Chicago Public Schools—Office of Accountability	3
• DePaul University—Center for Urban Education	23
• DePaul University—School Achievement Structure	16
• I Had a Dream Foundation—National School Services	5
• Illinois Resource Center	1
• Malcolm X Community College	3
• National Academy of Local Schools	1
• National Institute for Direct Instruction	1
• Northeastern Illinois University	17
• North Central Regional Educational Laboratory	5
• Quality Education Seminar, Ltd.	1
• Roosevelt University—Chicago Educational Alliance	1
• University of Chicago—Center for School Improvement	1
• University of Illinois at Chicago—Center for Literacy	1
• University of Illinois at Chicago—Small Schools Workshop	3

Source: Chicago Public Schools, Office of Accountability.

but do not also participate in activities provided by an external source experience somewhat lower-quality professional development, as do those who rely primarily on college and university courses and activities provided by external organizations but do not also participate frequently in teacher networks or school-based activities. The highest-quality professional development is experienced by teachers who participate in activities associated with teacher networks and external professional organizations. The key element here is the combination of external expertise with learning alongside other teachers.

Discussion

We found that the most frequently used source of teacher professional development is school-based activity. At the same time, our findings suggest that a combination of “inside” and “outside” sources provides the highest quality, and perhaps the most effective, professional development. While it is important that professional development be grounded in teachers’ own problems, opportunities, and experiences, it is also important that teachers’ learning be infused with external ideas and challenges.⁵⁶ School-based learning helps to make learning obtained from out-

side sources relevant and useful. At the same time, learning from outside sources, be they other teachers or external experts, keeps school-based learning open to interrogation and interpretation, and reduces the chances that it will simply serve to perpetuate prevailing ideas and practices.⁵⁷

This same conclusion is reached by Karen Miles and Linda Darling-Hammond in their recent study of professional development in high-performing schools for the Consortium for Policy Research in Education at the University of Pennsylvania.⁵⁸ While professional development activities and emphases differed by school, Miles and Darling-Hammond found a common pattern of “distributed expertise” in teacher professional development. These high-performing schools drew on internal expertise through in-house professional development activity, and on outside expertise to complement and challenge internal expertise. They found that external expertise promoted the development of internal expertise, which in turn promoted higher-quality learning opportunities for teachers.

Professional Development in Probation and Annenberg Schools

Since the 1996-1997 school year, CPS’ academic probation policy and the Annenberg Challenge have been two major sources of professional development for Chicago’s teachers, in particular for teachers in Chicago’s lowest-achieving schools. Both initiatives link schools with external partners who may provide new professional development opportunities for teachers. Schools on academic probation are assigned probation managers by the central office. They must form probation teams consisting largely of outside partners, experts, and other external agents. With the probation manager, these teams are to de-

velop, implement, and monitor a school improvement plan to remove the school from probation. The Annenberg Challenge also links schools with external partners, but through networks of schools voluntarily organized to support local improvement initiatives.

While both initiatives link schools with external partners, each represents a different mechanism for delivering professional development to teachers. Probation is a more externally initiated, bureaucratic, and regulatory vehicle for delivery. The Chicago Annenberg Challenge is a voluntary, locally-initiated vehicle. Annenberg schools agree to work with their external partners to achieve improvement goals of their own choice and definition. Annenberg schools can withdraw from their networks and from work with their external partners without penalty. The stakes associated with failure are not great. This is not the case in the relationship between schools on probation and their probation managers.

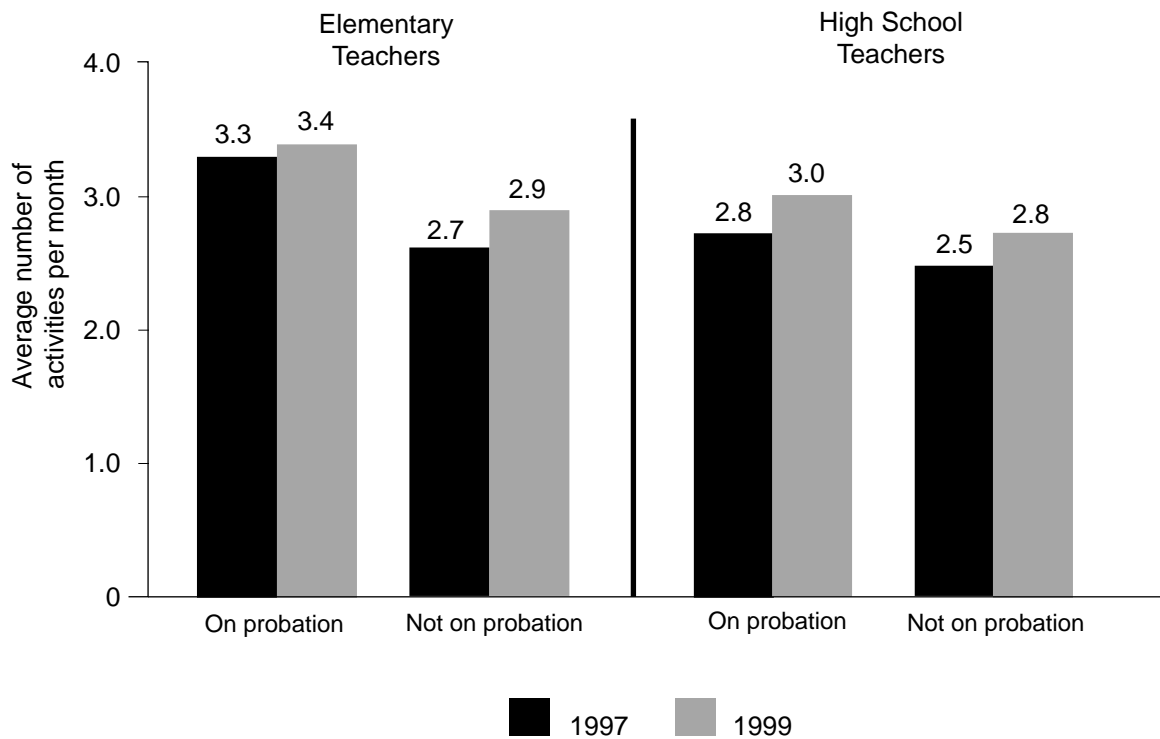
It is important to note that the 1997 teacher survey, from which we draw our baseline data, was administered during the spring of the first year of CPS’ probation policy and the first full year of the Chicago Annenberg Challenge. It is possible, then, that responses of teachers in probation schools may have been negatively influenced by their first encounter with the high stakes and uncertainties of the new



John Booz

Figure 17

Teacher Participation in Professional Development Activities by School Probation Status
Elementary and High School Teachers, 1997 and 1999



policy, while the responses of teachers in Annenberg schools may have been positively influenced by enthusiasm at receiving new Annenberg grant money. We would expect that any negative influences associated with the beginning of probation and any positive influences associated with the beginning of the Challenge would have leveled out by the time of the 1999 survey.

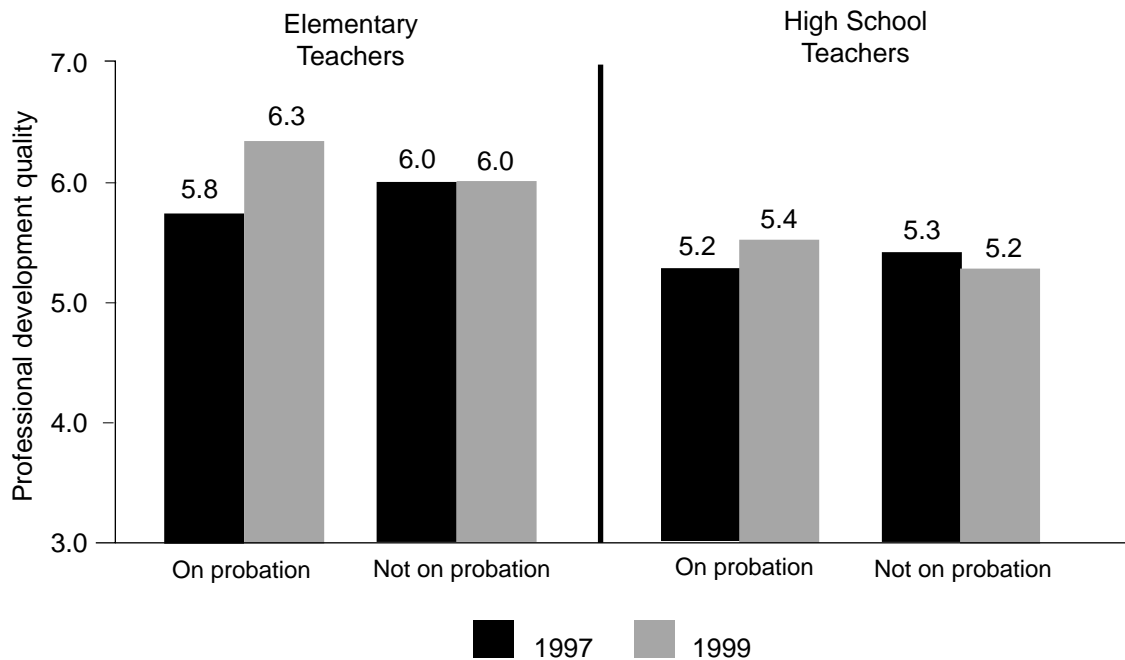
We examined the frequency of participation and quality of professional development experienced by teachers in probation and Annenberg schools. We looked at how these characteristics of professional development changed in these schools between 1997 and 1999. We compared schools on academic probation to schools not on probation. We compared schools participating in the Chicago Annenberg Challenge with schools that were not participating in the Challenge. In making these comparisons, we controlled for key school demographic characteristics,

such as levels of student achievement, percent low-income students, school racial and ethnic composition, and school size. For probation schools, we took into account Annenberg participation. For Annenberg schools, we took into account probation status. As in the previous section, we examined elementary and high schools separately.

Comparing Schools On and Not On Probation

As shown in Figure 17, teachers in both elementary schools and high schools on probation participated in professional development activities at higher rates than teachers in schools not on probation. In 1999, rates of participation had increased for teachers in both probation and non-probation elementary schools, although teachers in probation elementary schools continued to participate at a greater rate than teachers in non-probation schools. Rates of partici-

Quality of Professional Development by School Probation Status Elementary and High School Teachers, 1997 and 1999



pation among high school teachers in schools not on probation increased to the point where there was little difference between these two groups.

The quality of professional development for teachers in probation elementary schools increased substantially between 1997 and 1999 (see Figure 18). In 1997, the quality of professional development was slightly lower in probation than in non-probation elementary schools. By 1999, however, the quality of professional development had increased in elementary schools on probation to a level higher than elementary schools not on probation. The quality of professional development in non-probation elementary schools remained the same from 1997 to 1999.

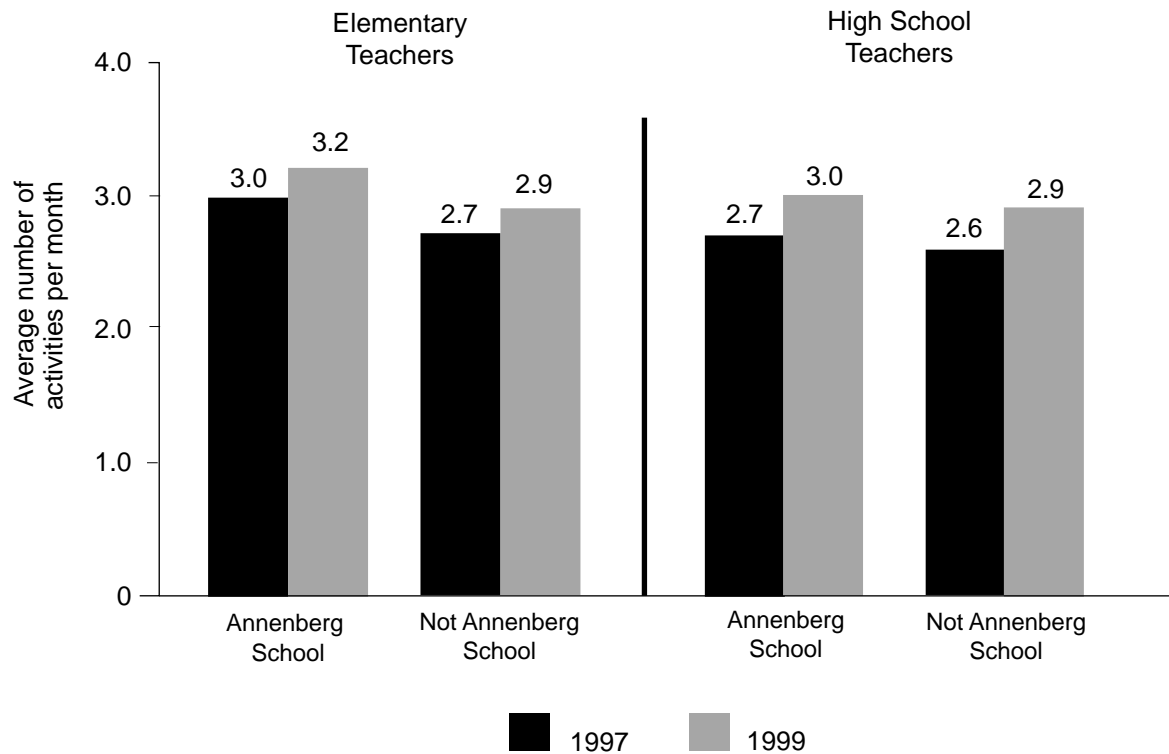
Teachers in high schools on and not on probation experienced professional development of similar quality in both 1997 and 1999 (see Figure 18). The quality of professional development among teachers in probation high schools increased slightly between 1997 and 1999, while quality of professional development in high schools not on probation fell slightly. It should be noted that in both 1997 and 1999, the

quality of professional development among teachers in elementary schools on probation was higher than the quality of professional development among teachers in high schools on probation. This is consistent with our citywide findings.

There are a number of possible reasons why professional development participation and quality have increased in probation schools. These changes could be the result of a correction to negative influences on survey responses associated with the initial implementation of probation policy. However, since the quality of professional development reported in probation schools exceeds that reported in non-probation schools, the increase more likely reflects real change in practice. More specifically, it could reflect improvement in the work of probation partners or improvement in the relationships between partners and schools on probation. Indeed, there is some indication that the school system has “weeded out” its weakest probation partners. Five probation partners that worked with schools during the 1996-1997 and 1997-1998 school years did not work

Figure 19

**Teacher Participation in Professional Development Activities
By School Participation in the Chicago Annenberg Challenge
Elementary and High School Teachers, 1997 and 1999**



with schools in 1998-1999, while about one-third of all schools on probation have had new partners assigned since 1996-1997.

Comparing Annenberg and Non-Annenberg Schools

As shown in Figure 19, teachers in Annenberg elementary schools reported greater rates of participation in professional development in 1997 and 1999 than teachers in non-Annenberg schools. In both Annenberg and non-Annenberg schools, rates of participation were greater in 1999 than in 1997. Consistent with citywide trends, participation rates in Annenberg high schools remained somewhat lower than rates in Annenberg elementary schools.

In 1997, the quality of professional development in Annenberg elementary schools was not substantially different from the quality of professional development in non-Annenberg schools. However, as

shown in Figure 20, professional development quality increased slightly in Annenberg elementary schools between 1997 and 1999 but remained unchanged in non-Annenberg schools. The quality of professional development experienced by teachers in Annenberg high schools was slightly higher than the quality of professional development experienced by teachers in non-Annenberg high schools. The quality of professional development in Annenberg high schools remained the same between 1997 and 1999 and increased slightly in non-Annenberg high schools. Still, in 1999, professional development quality was slightly higher in Annenberg than in non-Annenberg high schools. Consistent with citywide findings, the quality of professional development in Annenberg high schools remained lower than the quality of professional development in Annenberg elementary schools.

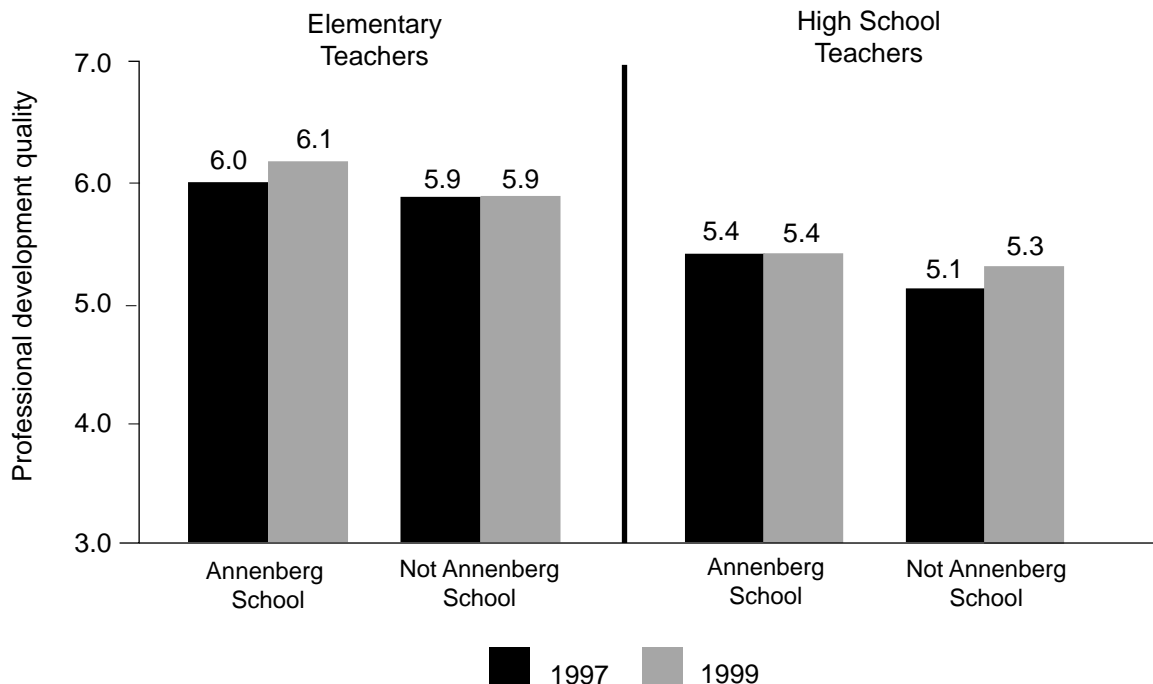
There are several possible explanations for the small increase in the quality of professional development reported by Annenberg elementary school teachers. The external partners who received early Annenberg support and who focused on instructional improvement were likely to have brought to their schools professional development aligned with our definition of high quality. Our fieldwork and our review of documents produced by Annenberg external partners suggest that this may be the case. In addition, as the Chicago Annenberg Challenge entered its second and third years, it began to emphasize teacher professional development and instructional improvement in its funding decisions, encouraging external partners to focus their efforts more specifically in these directions. Such encouragement may have contributed to the small increase in professional development quality seen in Annenberg schools between 1997 and 1999.

Discussion

These findings do not lead us to any clear conclusions about the relative efficacy of probation policy or the Chicago Annenberg Challenge as vehicles for delivering professional development to teachers. Rather, they suggest that high quality professional development can be delivered through systems that are top-down and mandatory as well as local and voluntary. As an additional test, we examined whether the relationships between the professional development elements and teachers' instructional strategies were different in Annenberg schools and probation schools compared to non-Annenberg and non-probation schools. We found that there were no differences.⁵⁹ Quality and frequency of professional development had similar effects on instruction in Annenberg schools, probation schools, and other schools. We shall return to the issue of delivering high quality professional development in the interpretive summary of this report, and these point to some important considerations and cautions in interpreting these findings.

Figure 20

Quality of Professional Development by School Participation in the Chicago Annenberg Challenge
Elementary and High School Teachers, 1997 and 1999



Chicago Annenberg Challenge External Partners, 1999

The following organizations served as external partners to schools in networks receiving implementation grants from the Chicago Annenberg Challenge in 1998-99. The number of schools in each external partner's network or networks is shown to the right of each partner's name.

• Academic Development Institute	3
• Association of Middle Level Schools	3
• Beverly Area Planning Association	6
• Chicago Children's Museum	3
• Chicago Metropolitan History Education Center	4
• Chicago State University	8 ¹
• Chicago Symphony Orchestra	3
• Chicago Teachers Union—Quest Center	3
• Coalition for Improved Education in South Shore	9
• Coalition of Essential Schools Regional Center at Chicago	6
• DePaul University School of Education	4
• Designs for Change	5
• Erickson Institute	3
• Facing History and Ourselves	3
• Garfield Park Conservatory Alliance	4
• Great Books Foundation	4
• Hug-A-Book	3
• Illinois Future Problem Solving Bowl	5
• Illinois Learning Partnership	3
• Illinois Resource Center	3
• Imagine Chicago	4
• Kohl Children's Museum	3
• Logan Square Neighborhood Association	5
• Loyola University	4
• National-Louis University	10
• Near Northwest Neighborhood Association	5
• Northeastern Illinois University—Chicago Teachers' Center	16
• North Lawndale Learning Community	9
• Participation Associates	3
• People's Reinvestment Development Effort	3
• Roosevelt University	5
• Success for All Foundation	3
• Suzuki-Orff School for Young Musicians	4
• Teachers' Task Force	3
• University of Chicago—Center for School Improvement	8
• University of Illinois at Chicago—Small Schools Workshop	15 ²
• Whirlwind Performance Company	3
• Youth Guidance	12

Source: Chicago Annenberg Challenge.

¹These eight schools are schools within four larger schools.

²These 15 include some independent small schools as well as small schools within nine larger schools.

VI. Supporting Effective Professional Development in Schools

What support is important at the school level to promote effective teacher professional development? The literature draws our attention to three related organizational aspects of schools that form a system of supports for effective professional development.⁶⁰ Each is believed to support teacher participation in professional development, ensure high quality experiences, and promote classroom improvement as a result of professional development.

The first source of organizational support for effective professional development is time. Teachers need adequate time to participate in professional development that is sustained and followed up. They need time to experiment with new ideas and evaluate them in their classrooms. They also need time to work with and learn from other teachers from their own schools and perhaps from other schools. Teachers need time to work with external providers and to engage in their own study. Without sufficient time, professional development participation and quality are likely to suffer.

A second source of school organizational support is principal instructional leadership.⁶¹ Principals can direct professional development toward meaningful instructional improvement and development of school organizational capacity. They can clarify goals and expectations for teacher professional development and create a sense of urgency for teacher learning and change. Principals can secure resources necessary to support professional development and classroom improvement, including time, money, and external assistance. They can create an environment conducive to teacher learning and change. Principals can set high standards for teachers and students, encourage teachers to participate in professional development, and hold them accountable for applying new learning in their classrooms. They can embed professional development in teachers' work routines. It is important that principals develop and support collaborative relationships among teachers. These relationships can serve both as a source of and a support for learning and classroom improvement.⁶²

A third source of organizational support is the professional capacity of a school, that is, the human, social, and normative resources that are available to support teacher learning and improvement.⁶³ Specifically, the literature points to the importance of a school's professional community and a school's orientation toward innovation. Professional community has been described in several ways,⁶⁴ but here we define it as a collaborative workplace environment with reflective dialog and shared norms focused on improvement of teaching and learning. In Sections II and III of this report, we considered orientation toward innovation as an outcome of professional development. We indicated that professional development can stimulate ongoing learning, experimentation, and improvement. Now we consider orientation toward innovation as a source of support for professional development. As school orientation toward innovation can be enhanced by effective professional development, so too can it serve as a stimulus for ongoing effective professional development.

In schools with strong norms for innovation and strong professional communities, teachers find motivation, direction, and accountability for continuous learning and development.⁶⁵ They find among their colleagues sources of new ideas, intellectual stimulation, and feedback essential to deepen learning and promote instructional change. They also find encour-

agement and safety in challenging taken-for-granted assumptions, risk-taking, and experimenting with new ideas.⁶⁶ In schools without these social and normative sources of support, teacher learning tends to be superficial and improvement limited.⁶⁷

We can extend the model of effective professional development introduced in Section II to include these school-level supports for professional development, instructional improvement, and student achievement (see Figure 21).⁶⁸ To round out our model, we can add the support provided by different sources of professional development discussed in Section IV.

We can also add another important element to this model—system-level supports. While we did not study these supports directly, it is important nevertheless to mention them. A number of studies have found that system-level policies and practices can have significant influence on the effectiveness of professional development and teachers' efforts to improve their practice.⁶⁹ System-level policies and procedures can enhance a school's ability to support professional development. The school system can advocate for and make legitimate professional development and the goals it seeks to accomplish. Central administrators can promote coherence and consistency between system-level policies and school-level efforts to improve teaching through professional development.⁷⁰ They can promote a common vision and a "culture" of pro-

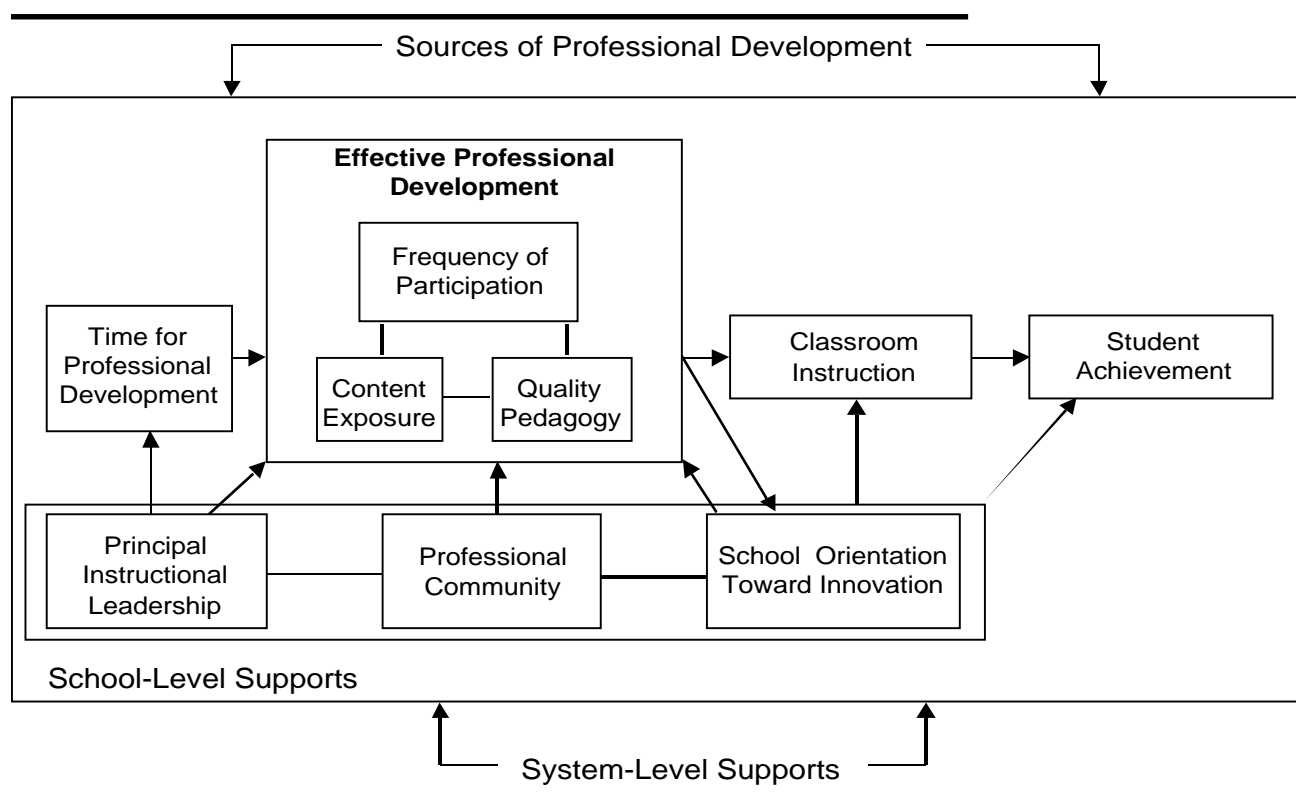
How Principal Instructional Leadership Was Measured

Our measure of principal instructional leadership is a school average of teachers' reports about their principals' emphasis and support of high standards for teaching and student learning. Items used to construct this measure asked teachers the extent to which the principals of their schools:

- Carefully track student academic progress.
- Understand how children learn.
- Press teachers to implement what they have learned in professional development.
- Communicate a clear vision for the school.
- Set high standards for student learning.
- Set high standards for teaching.
- Make clear to staff their expectations for meeting instructional goals.

The internal reliability coefficient for this measure is 0.90 for both 1997 and 1999.

Expanded Model of Effective Professional Development



professional learning. They can secure human, financial, and material resources, and establish policies to increase time available for teacher participation in professional development. Finally, central administrators can “buffer” professional development activity from outside interference and help maintain focus and stability in improvement efforts.⁷¹ Of course, the opposite is also possible. System-level policies and procedures can frustrate a school’s ability to support effective professional development. The system can fail to advocate and provide legitimacy for professional development. It can fail to promote coherence, a common vision, and a “culture” of professional learning. It can also fail to provide crucial resources, stability, and protection from external interference. In such a context, we would expect the effectiveness of professional development to be compromised.

We studied the influence of principal instructional leadership, school orientation toward innovation, and teacher professional community on professional development in several ways. We looked at cross-sec-

tional relationships in 1997. Then we examined the relationships between change in leadership, innovation, and professional community from 1997 to 1999, and change in professional development participation and quality during the same period.⁷² Our measures of principal instructional leadership and teacher professional community are described in the accompanying sidebars. Our measure of orientation toward innovation is described in a sidebar appearing in Section III. Before reporting our findings on the relationship of these school-level supports for professional development, we turn to a general discussion of the problem of time for professional development.

The Problem of Time

The problem of time for effective professional development is long-standing and acknowledged throughout the literature. For example, in a recent national survey of teachers, only 48 percent of respondents reported receiving release time for professional development and

How Teacher Professional Community Was Measured

Our measure of teacher professional community is a composite of several other measures derived from the 1997 and 1999 teacher surveys: (a) peer collaboration; (b) reflective dialog; (c) focus on student learning; and (d) collective responsibility.

Peer collaboration refers to the extent of a cooperative work ethic among staff. Items used to measure peer collaboration asked teachers about the extent to which:

- Teachers at their school design instructional programs together.
- Teachers at their school make a conscious effort to coordinate their teaching with instruction at other grade levels.
- The principal, teachers, and staff collaborate to make their school run effectively.
- Most teachers at their school are cordial.

Reflective dialog refers to the extent to which teachers talk with one another about instruction and student learning. Items used to measure reflective dialog asked teachers how often they had conversations with other teachers at their school about:

- School goals.
- Curriculum development.
- Managing class behavior.
- What helps students learn best.
- Assumptions about teaching and learning.

Other items used for this measure asked teachers the extent to which they:

- Share and discuss student work with other teachers.
- Talk about instruction in the teachers' lounge.

Focus on student learning gauges the extent to which teachers feel their school's goals and actions are focused on improving student learning. Items used for this measure asked teachers whether they agreed or disagreed that their schools:

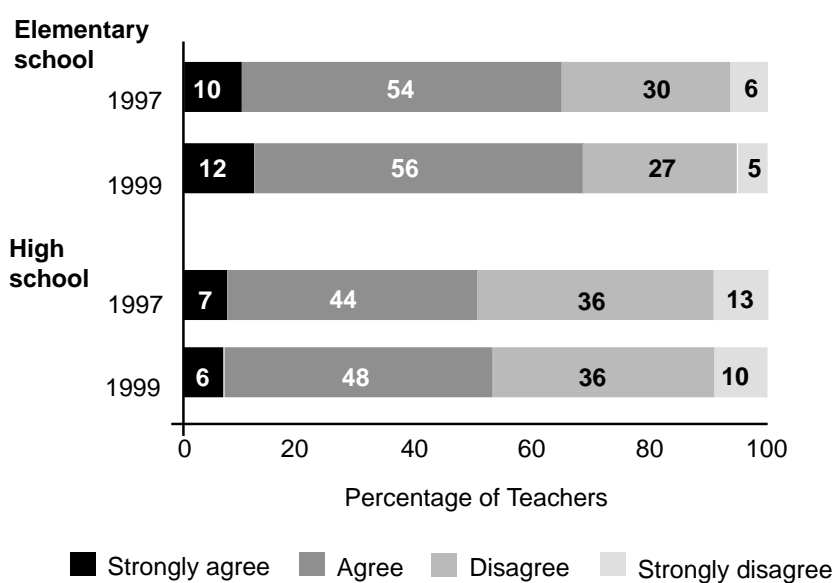
- Organize the school day to maximize instructional time.
- Set high standards for academic performance.
- Have well-defined learning expectations for all students.
- Focus on what's best for student learning when making decisions.
- Really work at developing students' social skills.

Finally, collective responsibility refers to shared commitment within a faculty to improve the school so that all students learn. Items used to construct this measure asked teachers whether most teachers in their schools:

- Feel responsible that all students learn.
- Set high standards for themselves.
- Feel responsible for helping students develop self-control.
- Take responsibility for improving the school.
- Help maintain discipline in the entire school.
- Feel responsible to help other teachers do their best.
- Feel responsible when students fail.

The internal reliability coefficient for this measure is 0.85 for both 1997 and 1999.

Teachers' Opinions of Whether They Have Enough Time To Think Carefully About, Try, and Evaluate New Ideas in Their Professional Development, 1997 and 1999



40 percent reported having time for professional development built into their work schedules.⁷³ Among Illinois respondents, 53 percent reported receiving release time and 36 percent reported having time built into their schedules for professional development. In comparative case studies of organizational influences on teacher learning in high schools, Jay Scribner found lack of time to be an endemic problem.⁷⁴ Teachers in these studies reported never having enough time for serious professional development. They routinely faced opportunity costs of addressing one professional development need at the expense of another. The organization of their work schedules made individual inquiry and collaboration—both highly valued learning activities among the teachers in this study—extremely difficult. Due to lack of time, what collective learning took place rarely moved beyond surface-level discussions or skimming reading material. The frantic pace of high school teaching and stressors, such as maintaining a safe environment for students and staff, left teachers weary and often unwilling to participate in their own learning activities after school or on weekends.

In Chicago, the problem of time for professional development can be illustrated in several ways. In a 1998 Consortium report, BetsAnn Smith noted time constraints imposed by the teacher union's contract with the system. The contract provides for 30

minutes of teacher preparation time every morning and up to 45 minutes for planning four days a week, not much time for quality professional development. The contract stipulates that teachers cannot work more than 33 hours a week without additional pay or without their schools obtaining contract waivers. Teachers receive five professional development days each summer, but these days tend to be used for classroom set-up or school administrative tasks rather than teacher learning activity. Smith also notes the possibility that the introduction of more after-school programs for students may have an unintended effect of reducing time that might be used for teacher professional development.

Another indicator of the problem of time comes from 1997 and 1999 Consortium teacher surveys. On these surveys teachers were asked to record their agreement or disagreement with the statement that they had enough time to “think carefully about, try, and evaluate new ideas” in their professional development. Their responses are shown in Figure 22. These responses make clear that shortage of time is a problem for many Chicago teachers. In 1997, 36 percent of elementary teachers and 49 percent of high school teachers reported that they did not have enough time for careful thought, experimentation, and evaluation. These percentages fell slightly in 1999 to 32 percent and 46 percent respectively. Still, many teachers lack time for learning and making classroom improvements.

Support from Principal Instructional Leadership

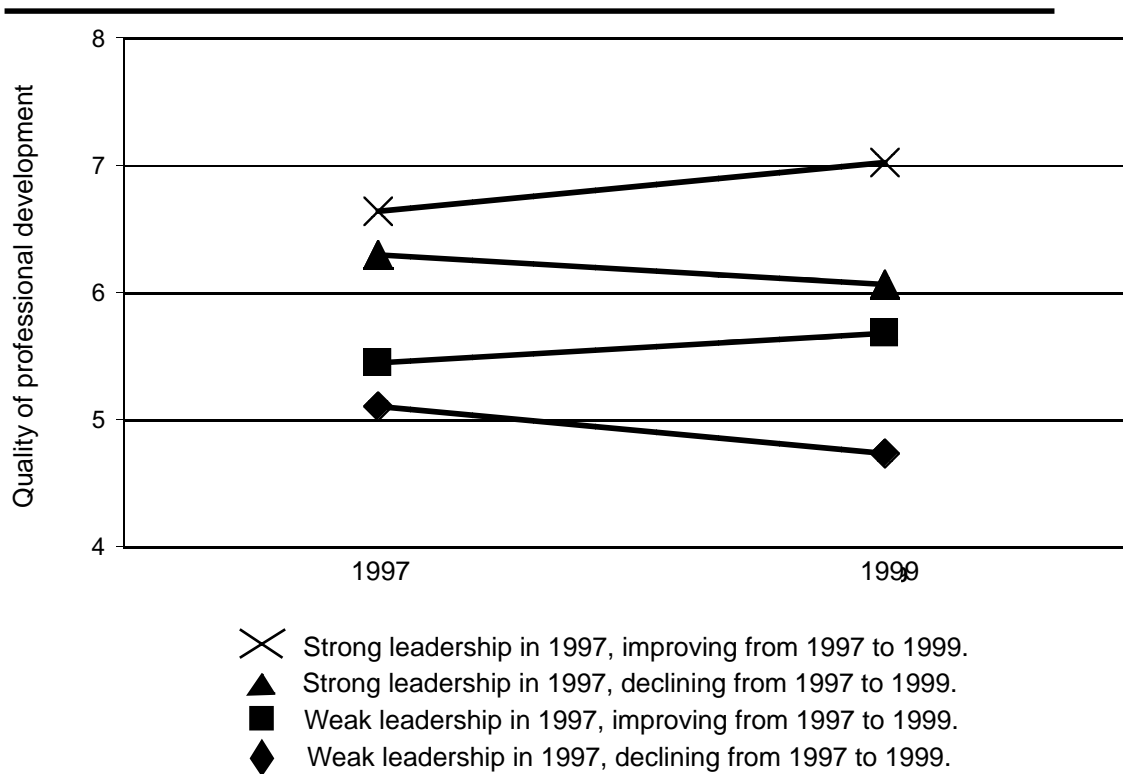
We found positive, statistically significant relationships between principal instructional leadership and the quality of teacher professional development. We found no significant relationships between principal leadership and the frequency of teacher participation in professional development. As shown in Figure 23, there are positive cross-sectional relationships between principal instructional leadership and the quality of teacher professional development. In 1997, strong principal leadership is associated with high quality professional development. We also found that in schools where principal leadership grew stronger, so too did the quality of teacher professional development increase. As shown by the first and third lines in the figure, professional development quality increased when principal leadership grew stronger,

whether initial principal leadership was strong or weak. On the other hand, as shown by the second and fourth lines on this graph, professional development quality declined when principal leadership weakened, regardless of whether initial leadership was strong or weak.

These findings point to a mutually influential relationship between principal leadership and the quality of professional development teachers experience. On one hand, strong principal leadership may help bring high quality professional development to teachers and create a supportive context for it. Strong principal leadership may provide time for participation and opportunities for collaborative learning. It may provide opportunities and incentives for teachers to apply what they learn in professional development in their classrooms. At the same time, high quality teacher professional development may make new demands on

Figure 23

Relationship Between Principal Instructional Leadership and Quality of Professional Development



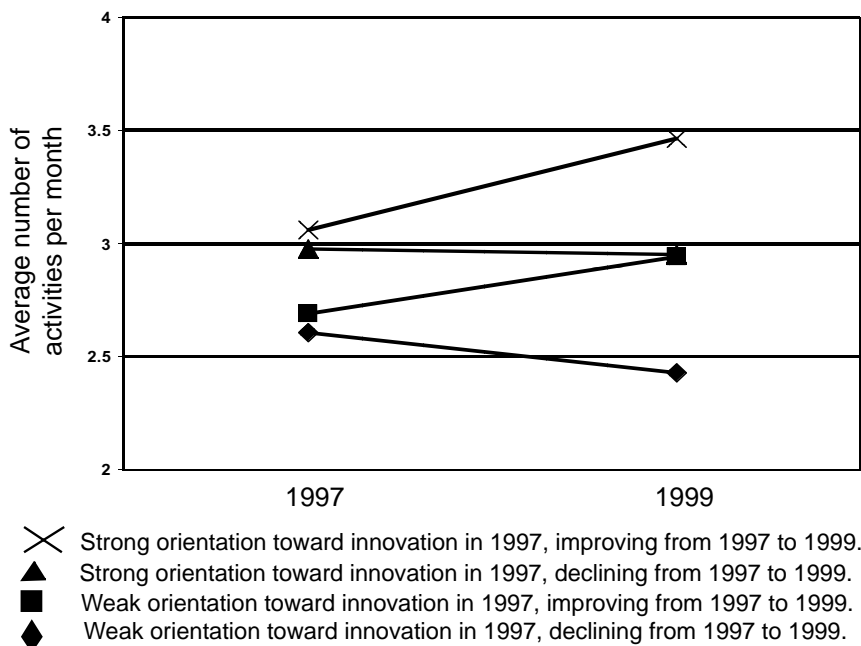
Weak leadership are schools 1 standard deviation or more below the mean. Strong leadership are schools 1 standard deviation or more above the mean. Improving leadership is 1 standard deviation or more above average change. Declining leadership is 1 standard deviation or more below average change.

principals for stronger instructional leadership. As high-quality professional development calls on teachers to engage in in-depth, sustained study, collaborate with other teachers, and take time to try out and evaluate new ideas in their classrooms, principals are called upon to support that activity. And, as quality professional development promotes school orientation toward innovation, so too is it likely to press principals to support it.⁷⁵ It is important to note that principal leadership can be an impediment to teacher professional development; however, these findings point to an important reciprocal relationship. High quality professional development for teachers may also serve to strengthen school instructional leadership.

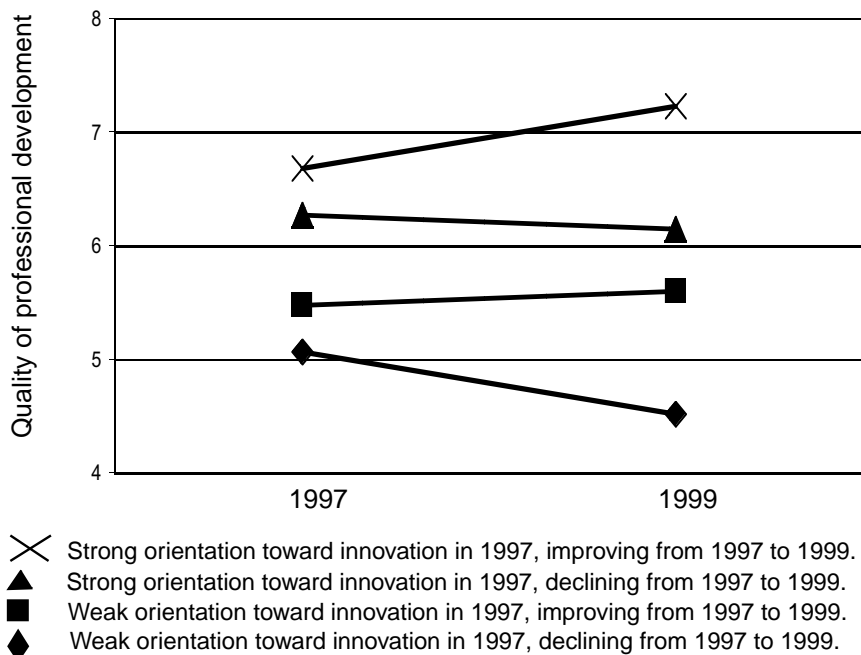
Support from School Orientation Toward Innovation

As we reported in Section III, there are positive relationships between school orientation toward innovation and teacher professional development. In that section, we focused on the influence of professional development participation and quality on orientation toward innovation. We return to those findings in this section and argue that orientation toward innovation can also promote effective professional development. As shown in Figure 24, there is a statistically significant, positive relationship between orientation toward innovation and teacher participation in professional

Relationship of School Orientation Toward Innovation to Teacher Participation in Professional Development



Relationship of School Orientation Toward Innovation to Quality of Professional Development



Weak school orientation toward innovation are schools 1 standard deviation or more below the mean. Strong orientation toward innovation are schools 1 standard deviation or more above the mean. Improving orientation is 1 standard deviation or more above average change. Declining orientation is 1 standard deviation or more below average change.



John Booz

development. In 1997, higher levels of orientation toward innovation are associated with greater teacher participation in professional development. Moreover, as shown by the first and third lines on the top graph of Figure 24, teacher participation in professional development increases as school orientation toward innovation increases, whether initial orientation is strong or weak. On the other hand, as shown by the second and fourth lines on this graph, participation declines as orientation toward innovation declines, whether initial orientation is strong or weak. There is also a significant positive relationship between orientation toward innovation and professional development quality. As with participation, greater orientation toward innovation is associated in 1997 with higher levels of quality. In addition, increases in orientation toward innovation appear to lead to increases in pro-

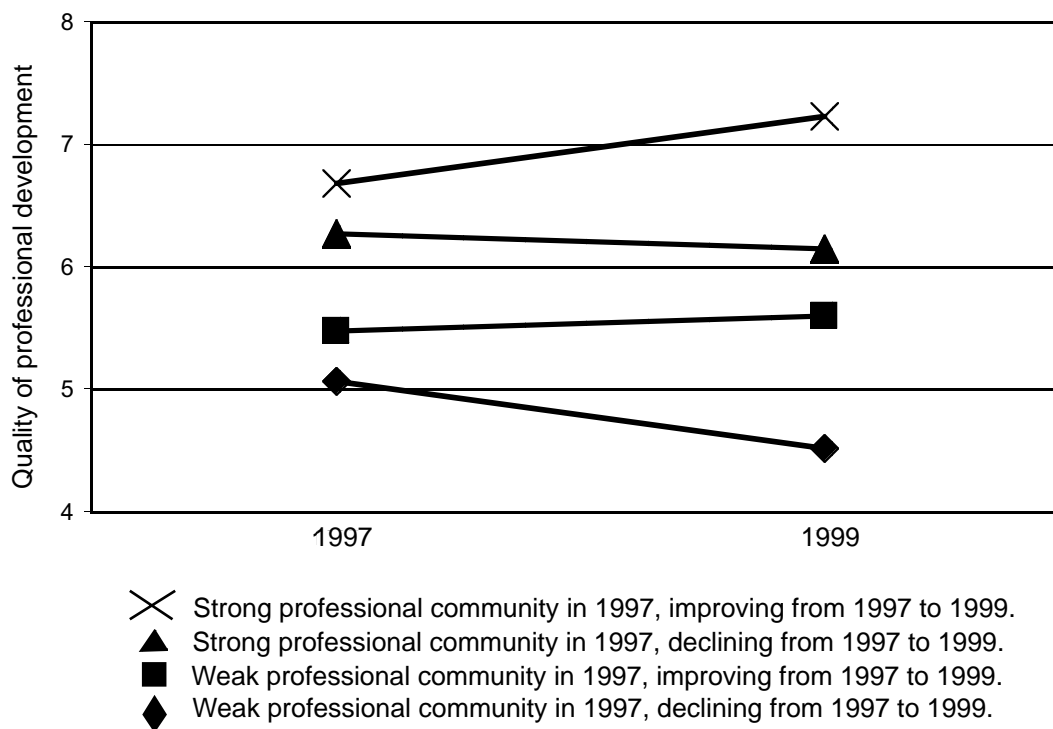
fessional development quality. As shown by the first and third lines in the bottom graph in Figure 24, professional development quality increases as school orientation toward innovation increases. As shown by the second and fourth lines, professional development declines as orientation declines. These relationships exist whether orientation toward innovation is initially strong or weak. Taken with findings reported in Section III, these findings indicate that quality professional development can promote school orientation toward innovation, that in turn can promote greater teacher participation and increases in professional development quality. Greater participation in higher-quality professional development continues to promote greater orientation toward innovation.

Support from Teacher Professional Community

We also found a significant, positive relationship between teacher professional community and the quality of professional development. As shown in Figure 25, strong professional community is associated with high professional development quality. Weak professional community is associated with

lower professional development quality. Figure 25 also shows that when professional community grows stronger, so does the quality of professional development. As shown by the first and third lines in the figure, professional development quality increases as teacher professional community are strong or weak. As shown by the second and fourth lines in the figure, professional development quality declines as teacher professional community weakens. This relationship holds true whether initial levels of professional community are strong or weak, but the decline is greater for initially weak professional communities that weaken further. Decline in quality is less for initially strong professional communities that weaken. There was no relationship, however, between growing strength of professional community and teacher participation in professional development.

Relationship of Teacher Professional Community to Quality of Professional Development



Weak professional community leadership are schools 1 standard deviation or more below the mean. Strong professional community are schools 1 standard deviation or more above the mean. Improving professional community is 1 standard deviation or more above average change. Declining professional community leadership is 1 standard deviation or more below average change.

Discussion

Our findings provide evidence that principal leadership, school orientation toward innovation, and teacher professional community provide important support for professional development. Principals who exercise strong instructional leadership set high standards and expectations for teaching and student learning, communicate a clear vision for their schools, monitor student progress, and see professional development as important enough to press teachers to implement what they learn from it in their classrooms. It makes sense that principals who exercise such leadership would also support teacher professional development that is sustained and followed up, coherently focused, and related to students' needs.

A school's orientation toward innovation also supports teacher participation in high quality professional development. A school that is highly oriented toward innovation will communicate strong expectations to its teachers for ongoing learning and improvement. A school that is highly oriented toward innovation will also support professional development that engages teachers in learning activities that themselves lead to further experimentation and innovation. Effective professional development and school orientation toward innovation appear to support each other in reciprocal manner.

Finally, teacher professional community can support effective professional development. A professional community characterized by a focus on student learn-

ing, peer collaboration, and reflective dialog provides social and normative support for teacher participation in professional development that is collaborative, addresses students' and teachers' needs, and promotes collective improvement goals. A professional community that examines assumptions about teaching through reflective dialog supports professional development that is sustained and coherently focused on instructional improvement. Professional community that does not focus on student learning, and that is characterized by norms of professional privacy and individual autonomy rather than collective responsibility, will not easily support collaborative professional development or professional development that is coherently focused on school-wide improvement goals. Indeed, such a professional community may implicitly or explicitly communicate to teachers that they alone are responsible for their professional development.

Our findings also indicate that the relationships between professional development and principal leadership, school orientation toward innovation, and professional community are mutually influential. We cannot determine statistically whether simultaneous improvement in these school-level supports with improvement in professional development is a result of these supports affecting teachers' professional development experiences, or teachers' experiences promoting these school-level supports. Still, the logic of these relationships indicates that as leadership, orientation toward innovation, and professional community support effective teacher professional development, so too does effective professional development appear to promote the development of these important supports for school and instructional improvement. In this way effective teacher professional development serves as much more than a means to promote classroom instructional improvement. It works more systemically as a means of school improvement.

VII. Interpretive Summary

This report addressed three questions about teacher professional development. First, what makes professional development effective? Second, to what extent do Chicago teachers experience effective professional development and where are needs for improvement? And, third, what sources, means of delivery, and support, particularly at the school level, are important to promote effective professional development?

We presented a model that defines effective professional development by three elements—frequency of participation, exposure to appropriate content, and quality of pedagogy. High quality professional development is sustained, coherently focused, and followed-up. It involves collaborative work and learning with other teachers. It relates to needs of students and to school improvement goals. It provides teachers exposure to content related to improvements sought. Finally, it provides enough time for teachers to think carefully about, try out, and evaluate new ideas in their classrooms. We presented evidence that professional development so defined relates to teachers' instructional practice and to school orientation toward innovation. Specifically, our findings point to the importance of pedagogical quality and exposure to particular content for improving instruction. We found that teacher participation in high-quality professional development can promote school orientation toward innovation, which in turn can support ongoing instructional improvement.

We found that professional development in Chicago is uneven. We found encouraging evidence that teacher participation in professional development increased between 1997 and 1999 and that slightly larger proportions of teachers are experiencing higher quality professional development. Improvement is particularly noteworthy in the system's lowest-achieving schools, small schools, and schools on academic probation. System-wide, about 25 percent of Chicago teachers experience

what we call high quality professional development. Another 50 percent experience moderate quality that contains some positive elements that make it effective but may also contain weaknesses in other important elements such as the adequacy of follow-up activities and time for teachers to apply what they learn in their classrooms. About 25 percent of teachers report low or minimal quality experiences. Moreover, some groups of teachers who need support from strong professional development get less of it. These include high school teachers generally, beginning elementary school teachers, and teachers who work in large schools.

We found that teachers draw on many sources of professional development but that they participate most frequently in school-based activity. Teachers experience higher quality professional development when they draw on a combination of sources, including teacher networks, external professional organizations, and school-based activities. This combination of “inside-outside” sources provides an important mix of relevance, impetus, and expertise that promotes teacher learning and instructional improvement. We found more participation and higher quality professional development than average in probation schools and in schools participating in the Chicago Annenberg Challenge, particularly at the elementary level. Our analyses of professional development in probation and Annenberg schools analyses indicate that high-quality professional development can be delivered by external agents in mandatory as well as voluntary contexts. At the same time, we caution that the conditions under which even high quality professional development is provided may positively or negatively affect teachers’ participation, their learning, and their efforts to apply new learning in their classrooms. Over time, teachers may be less willing to participate in and act upon professional development that is imposed on them from external sources, no matter how high the quality.⁷⁶

Finally, we found that effective professional development can be promoted by several school-level supports. Principals’ instructional leadership can promote

more frequent teacher participation in professional development. A school’s orientation toward innovation and teacher professional community can provide social and normative support for participation in high-quality professional development and for instructional improvement. At the same time, we found evidence that professional development can also serve to strengthen school leadership and teacher professional community. We also noted the problem of time and the importance of system-level support for effective professional development.

While some Chicago teachers experience high-quality professional development and while the quality of professional development for others is improving, there is more work to be done. Professional development in Chicago remains, for many teachers, largely fragmented and pursued individually. Often Chicago teachers report that their professional development lacks qualities that make it effective. Notably lacking for some teachers are follow-up activities and time to think about, try out, and evaluate new ideas from professional development in their classrooms. These are important weaknesses that can compromise the effectiveness of professional development over time. Moreover, there are some groups of teachers who have substantial need for improvement in the quality of their professional development. These groups include high school teachers generally, beginning elementary teachers, and teachers who work in large schools. While there has been significant improvement in the quality of professional development of teachers in the system’s lowest-achieving elementary schools, and we stress the importance of continuing to provide these teachers with strong professional development, it is also important to work harder at providing high quality professional development to teachers in low-performing high schools. Finally, relatively few teachers receive extended exposure to content that, when linked with high-quality learning experiences, makes professional development an effective means of improving instruction.

If we take seriously the task of improving professional development, four matters should be consid-

ered. First, it will be insufficient simply to increase teacher participation in professional development without also improving its pedagogical quality and promoting extended exposure to content conducive to instructional improvement. In other words, efforts to improve the effectiveness of professional development need to develop quality and content together.

Second, efforts to make professional development more effective must attend to its sources and the means by which professional development is delivered to teachers. Schools and the system should develop those sources that provide the highest quality professional development to teachers. Careful attention should be paid to two aspects of delivery. Externally-imposed, mandatory professional development may be necessary to “jump start” classroom improvement, but care should be taken to determine when externally-imposed professional development becomes counterproductive; that is, when it becomes a disincentive for teacher learning and change and a source of resistance. Our findings show that combinations of school-based activity and activity with teacher networks and external professional groups provide particularly high-quality professional development experiences. This raises the important matter of coordination among different sources of professional development to avoid fragmentation and promote coherent, sustained learning experiences for teachers.

Third, efforts to improve the effectiveness of professional development also need to attend to the development of school-level supports for teacher learning and instructional improvement. Time is a crucial resource that needs to be developed. Principal instructional leadership, school orientation toward innovation, and teacher professional community are also sources of support that may need to be developed. It is unlikely high-quality professional development will be effective for very long in schools where principal leadership does not embrace it. Nor is it likely that high quality professional development will be very effective in schools that fail to develop an orientation toward innovation and improvement. High-

quality professional development appears to be an important means of developing these supportive contexts. Our analyses show that high-quality professional development can develop an orientation toward innovation that, in turn, can promote ongoing teacher learning and improvement. Moreover, high-quality professional development appears to promote teacher professional community and school leadership.⁷⁷ It is likely, however, that additional direct efforts may need to be made to develop supportive principal leadership and to promote working relationships among teachers that will provide strong support for teacher learning and improvement, especially in schools with an initially weak base of human and social resources.

Finally, attention should be given to how system-level policies and procedures support or constrain effective professional development and instructional improvement. While this report does not examine system-level support of professional development per se, the literature strongly argues that in order for professional development to be effective, school systems need to provide adequate financial and political resources to support it. They need to make time for professional development and for making classroom improvement. Systems also need to provide direction, urgency, and intellectual leadership. They need to ensure that professional development is of high quality and is linked to system-level as well as school-level goals for improvement. Systems can coordinate and develop coherence among multiple sources of professional development. They can make sure that other policies and procedures do not inadvertently compromise the quality and effectiveness of teachers’ learning experiences.

To conclude, professional development done well can make an important contribution to improving education for Chicago students. But effective professional development requires substantial support at both school and system levels. Increasing the quality and effectiveness of professional development requires deep commitment and long, steady work. This report provides evidence that it is work worth doing.

Endnotes

¹ Sarason (1990).

² Thayer (1888), cited in Richey (1957). In the mid-1800s, teachers working in the common schools were considered “generally immature” and in “need for better command of subject matter and of appropriate methods of teaching it” (1957, p. 36). As historian Herman Richey recounted, critics charged that between the establishment of state systems of public education and the end of Reconstruction, schools were staffed by “probably the most indifferent, incompetent, and poorly educated teachers in the history of American education” (Richey, 1957, p. 37). Many teachers had little more than a common school education themselves, but much of the blame was reserved for the low quality of teacher training in normal schools. Thus, in its earliest manifestations, teacher professional development was promoted as a means to “correct deficiencies” of poor initial preparation. At the turn of the century, pre-service education in normal schools improved and colleges and universities began to play a greater role in teacher preparation. Professional development came to be seen less as a means to correct “deficiencies” of initial preparation and more as a means to promote teacher growth.

³ In the mid-1920s and 1930s, the primary focus of professional development continued to shift from correcting deficiencies to promoting teachers’ professional growth more broadly. While concerns about inadequate initial teacher preparation remained, the need for professional development became even more closely linked with the need for schools to address new social problems and for teachers to keep up with the growing educational demands of “our rapidly changing culture.” In the mid-1950s, the Educational Policy Commission charged schools with the responsibility for developing among their students “a broad foundation of education, which is one of the bases for the miracle of the American industrial economy; know-how of ordinary living in our complex society; typical understanding of the basic moral commitments of democracy; moral and spiritual values; and nation-wide understanding necessary for meeting growing international responsibility” (Hass, 1957, p. 15). This was a tall order, particularly at a time when schools faced new challenges from the growth and diversity of student enrollments and teaching staff, school desegregation, and the continuous expansion of knowledge about subject matter and learning processes. Not lost was the growing concern about the problem of “how to teach in this age of television” (Hass, 1957).

⁴ Fullan and Hargreaves (1992) and Lieberman (1995).

⁵ National Commission on Teaching and America’s Future (1996).

⁶ See Corcoran (1995), Miles (1995), and Rubin (1978).

⁷ National Commission (1996). Other observers have described professional development as “low-intensity” activity requiring little time and effort from teachers (Little, 1989; Corcoran, Shields, and Zucker, 1998), a “fragmented and incoherent curriculum” largely disconnected from other initiatives to improve schools and the teaching profession (Cohen and Hill, in press; Fullan and Watson, 1997).

⁸ Miles (1995), p. vii.

⁹ See Scribner (1999b) and Smylie (1989).

¹⁰ Buckney (1999).

¹¹ Vallas quoted in Coffey (1999).

¹² Duffrin (1998).

¹³ At *Catalyst’s* request, the CPS central office tallied the amount of money budgeted for professional development in 1997-98. That total, \$75 million, was about 2.5 percent of the district’s \$3 billion budget. This figure included professional development in a host of programs, including Drivers Education and ROTC. The largest item “by far” was \$7.2 million for “learning technology,” which included some equipment purchases as well as teacher education (Duffin, 1998, p. 8). The percentage the system spent falls within estimates of average system-wide proportion of total budget spent on teacher professional development (National Commission, 1996), however, it is less than the proportion of total budget spent by some other large urban school systems. For example, the Boston Public Schools spends nearly four percent of its total operating budget on professional development (Boston Plan for Excellence and the Board Public Schools, 1999). In addition, the issue argued that since 1995 most new education spending had gone for additional teaching time rather than improved teaching. It used as an example the central administration’s decision to redirect \$8 million in the FY 1998 budget from teacher professional development to extended-day and summer school programs for students.

¹⁴ The Chicago Teachers Union contract with the system provides for 30 minutes of teacher preparation time every morning and up to 45 more minutes for planning four days a week. The contract stipulates that teachers cannot work more than 33 hours a week without additional pay or without their schools obtaining a contract waiver (Smith, 1998). Teachers receive five professional development days each summer, although these days tend to be used for classroom set-up rather than teacher learning activity.

¹⁵ Lenz (1999).

¹⁶ In our research, we consider school orientation toward innovation both an outcome and source of support for professional development. We argue that effective professional development should promote norms of experimentation and innovation among teachers. In turn, these norms should provide support for ongoing learning and professional development.

¹⁷ Newmann, King, and Youngs (2000), Schlechty and Whitford (1983), Sparks and Loucks-Horsley (1990).

¹⁸ See Sparks and Loucks-Horsley (1990). For a typology and theoretical discussion of different teacher learning outcomes, see Smylie (1995).

¹⁹ Smylie (1995). See also Jarvis (1987).

²⁰ Randi and Corno (1997).

²¹ Little (1993), pp. 132, 133.

²² For a more detailed comparison of interactive and didactic instruction see Smith, Lee, and Newmann (2001).

²³ Smith et al., 2001.

²⁴ Bryk, Newmann, and Nagaoka (2001).

²⁵ Darling-Hammond (1997), National Staff Development Council (1994, 1995), National Commission (1996), and National Partnership for Excellence and Accountability in Teaching (1998). See also Darling-Hammond and McLaughlin (1995).

²⁶ Parker (1957).

²⁷ Wilson and Berne (1999), p. 176. Italics in the original.

²⁸ See Smylie (1995) and Wilson and Berne (1999).

²⁹ Corcoran, Shields, and Zucker, (1998) and Wilson and Berne (1999).

³⁰ See e.g., Bos and Anders (1994), Cohen and Hill (in press); Kennedy (1998), Pennell and Firestone (1998), Smylie (1986), Sparks (1986), Wiley and Yoon (1995).

³¹ The positive relationship between school orientation toward innovation measured as part of a larger construct of work orientation and student achievement is shown in Bryk et al. (forthcoming).

³² The instruction analyses were performed using two three-level hierarchical linear models, one with interactive instruction as the dependent variable and the other with didactic instruction as the dependent variable. In each equation, Level 1 was a measurement model which adjusted each teacher's measure of instruction for the degree of reliability with which

their score was measured. Level 2 measured teachers' use of the instructional approach controlling for teachers' years of experience, race/ethnicity, education, and the relationship between use of the instructional approach and variables representing quality of professional development and time spent in professional development, as well as the four content areas of professional development. Level 3 controlled for school characteristics, including percentage of low-income students, school size, average student achievement, and school racial/ethnic composition (see Raudenbush et al., 2000). For information on the detailed statistics produced from these analyses, please contact the first or second author of this report.

³³ This analysis was done using a three-level hierarchical linear model with a latent variable regression (see Raudenbush et al., 2000). Level 1 was a measurement model that adjusted each teacher's measure of orientation toward innovation for the degree of reliability with which the score was measured. Level 2—the teacher level—produced an estimate of school orientation toward innovation in 1997 and the change in orientation from 1997 to 1999 from the responses of teachers within the school in each year, controlling for each teacher's years of experience, race/ethnicity, and level of education. Level 3—the school level—adjusted each estimate of school orientation toward innovation for the demographic characteristics of the school—the percentage of low-income students, school size, average student achievement, and school racial/ethnic composition. At Level 3, estimates were produced of the relationship between the professional development variables—average quantity and quality of professional development in 1997 and change in the average quantity and quality of professional development from 1997 to 1999—and school orientation toward innovation in 1997, as well as change in school-level orientation from 1997 to 1999. A latent variable regression was then performed in which the estimate of school orientation for 1997 was entered as a control in the estimation of change in orientation from 1997 to 1999. By controlling for the initial level of orientation toward innovation, we adjusted for the fact that schools with high levels of innovation are less likely to show change in orientation (i.e., regression to the mean). For information on the detailed statistics produced from these analyses, please contact the first or second author of this report.

³⁴ See Newmann, Bryk, and Nagaoka (2001), Smith et al. (2001), Bryk et al. (forthcoming).

³⁵ Additional information on construction of these measures can be obtained from the Consortium on Chicago School Research.

³⁶ We conducted these instruction analyses using both 1997 and 1999 data separately and found similar results both years in terms of frequency of participation and professional development quality. Because we lack 1999 data on professional development content, we could not examine content in both years. So, we present the findings of our analyses of 1997 data to maintain consistency across all three elements of professional development we examined.

³⁷ This finding is consistent with Cohen and Hill's (2000) study of the effects of professional development on classroom implementation of math frameworks in California. That study showed that teachers' participation in professional development of high pedagogical quality that focused specifically on the framework was associated with greater change in teacher practice in the direction of the framework than high quality professional development focused on general principles of math instruction.

³⁸ See Smith et al. (2001).

³⁹ Only 5 percent of the variance in frequency of professional development is explained by differences in average school frequency of professional development, as determined by an unconditional HLM model. Only 13 percent of the variance in professional development quality is between rather than within schools.

⁴⁰ The data reported here are means, that is, average levels of professional development frequency and quality.

⁴¹ That greater percentages of teachers can experience high quality professional development while the average quality of professional development does not increase can be explained by shifts in teachers' ratings of professional development quality within levels of quality. So, while more teachers "crossed-over" the line from moderate to high quality professional development in 1999, other teachers experiencing high quality professional development in 1997 moved down within the high quality category. When such shifts between and within categories of quality are considered, it is possible to see how more teachers can experience high quality professional development while the overall quality remains steady.

⁴² Tests of the significance of different levels of professional development by different teacher and school characteristics are for each year—1997 and 1999—and each type of school—elementary and high school—and combination models for measuring the change of professional development from 1997 to 1999. In each model the first level was a measurement model, the second level measured teachers, and the third model measured schools. Each test of group differences controlled for all other teacher and school characteris-

tics, as well as year and school type.

⁴³ Fenstermacher and Berliner (1985), Fullan (1991).

⁴⁴ See Elmore (1996).

⁴⁵ See e.g., Bryk et al. (1998); Hess (1995); Newmann, Smith, Allensworth, and Bryk (2001); Newmann and Sconzert (2000), and Smylie, Crowson, Chou, and Levin (1994).

⁴⁶ Little (1989). See also Wilson and Berne (1999).

⁴⁷ See Berge, Russell, and Walden (1957) and Little (1989).

⁴⁸ Havighurst (1964).

⁴⁹ Duffrin (1998), p. 8.

⁵⁰ See Newmann and Sconzert (2000).

⁵¹ Duffrin (1998), Shipps, Kahne, and Smylie (1999).

⁵² Little (1989).

⁵³ See e.g., Lieberman and Miller (1991).

⁵⁴ For more in-depth discussion of coherence in school instructional programs and improvement efforts, see Newmann, Smith, Allensworth, and Bryk (2001).

⁵⁵ From Newmann et al. (2001).

⁵⁶ For a review of relevant literature see Smylie (1995) and Smylie and Hart (1999).

⁵⁷ Cochran-Smith and Lytle (1999). See also Borko, Davinroy, Bliem, and Cumbo (2000).

⁵⁸ Miles and Darling-Hammond, 1997.

⁵⁹ These tests were performed by adding school-level dummy variables as predictors of the professional development effect in the HLM models predicting instruction.

⁶⁰ Sparks and Loucks-Horsley (1990).

⁶¹ Blasé and Blasé (1999), Guskey (1995), Leithwood, Leonard, and Sharratt (1998), Newmann, King, and Youngs (2000), Scribner (1999a), Scribner et al. (1999).

⁶² See also Smylie and Hart (1999).

⁶³ Guskey (1995), Randi and Corno (1997), Wilson and Berne (1999).

⁶⁴ Smylie and Hart (1999).

⁶⁵ Elmore, Peterson, and McCarthey (1996), Leithwood et al. (1998), Placier and Hamilton (1994), Scribner (1999a).

⁶⁶ See Edmondson (1999).

⁶⁷ Elmore et al. (1996), Leithwood et al. (1998), Scribner, 1999a).

⁶⁸ Empirical support for the positive effects of these school-level supports on student achievement may be found in Bryk et al. (forthcoming).

⁶⁹ See e.g., Darling-Hammond and McLaughlin (1995), Spillane (1994), Spillane and Thompson (1997), Watson, Fullan, and Kilcher (2000).

⁷⁰ Elmore (1997), Watson et al. (2000).

⁷¹ Darling-Hammond and McLaughlin (1995), Spillane and Thompson (1997), Youngs (2000).

⁷² We did not consider the influence of school organizational supports on teacher exposure to different professional development content. As explained earlier, we do not have 1999

data on content exposure to measure change between 1997 and 1999. Furthermore, the particular organizational supports we are studying are on their face “neutral.” There is no reason that any should be related to teacher exposure to any particular content area over another.

⁷³ Choy and Ross (1998). See also St. John, Ward, and Laine (1999).

⁷⁴ Scribner (1999a).

⁷⁵ See Newmann, King, and Youngs (2000).

⁷⁶ This issue is discussed in detail in Fenstermacher and Berliner (1985) and Fullan (1991).

⁷⁷ See Newmann, King, and Youngs (2000).

References

- Berge, M. L., H. E. Russell, and C. B. Walden (1957). In-Service Education Programs of Local School Systems. In Nelson B. Henry (ed.), *In-service Education for Teachers, Supervisors, and Administrators. The Fifty-sixth Yearbook of the National Society for the Study of Education, Part I* (197-223). Chicago: University of Chicago Press.
- Blasé, Joseph and Jo Blasé (1999). Principals' Instructional Leadership and Teacher Development: Teachers' Perspectives. *Educational Administration Quarterly*, 35 (3), 349-378.
- Borko, Hilda, Kathryn H. Davinroy, Carribeth L. Bliem, and Kathryn B. Cumbo (2000). Exploring and Supporting Teacher Change: Two Third-Grade Teachers' Experiences in a Mathematics and Literacy Staff Development Project. *Elementary School Journal*, 100 (4), 273-306.
- Bos, Candice S. and Patricia C. Anders (1994). The Study of Student Change. In Virginia Richardson (ed.), *Teacher Change and the Staff Development Process: A Case in Reading Instruction* (181-198). New York: Teachers College Press.
- Boston Plan for Excellence and the Boston Public Schools (1999, December). *Professional Development Spending in the Boston Public Schools*. Boston: Authors.
- Bryk, Anthony S., Penny B. Sebring, David Kerbow, Sharon Rollow, and John Q. Easton (1998). *Charting Chicago School Reform: Democratic Localism as a Lever for Change*. Boulder, CO: Westview.
- Bryk, Anthony S., Penny B. Sebring, and others (forthcoming). *Essential Supports and Contextual Resources for School Development* (working title). Chicago: Consortium on Chicago School Research.
- Buckney, Cozette (1999, March). Teachers Academy: One Effort of Many. *Catalyst*, 18.
- Choy, Susan P. and M. Ross (1998). *Toward Better Teaching: Professional Development in 1993-94* (NCES No. 98-230). Washington, DC: National Center for Educational Statistics.
- Cochran-Smith, Marilyn and Susan L. Lytle (1999). Relationships of Knowledge and Practice: Teacher Learning in Communities. In Asghar Iran-Nejad and P. David Peterson (eds.), *Review of Research in Education*, Volume 24 (249-305). Washington, DC: American Educational Research Association.
- Coffey, Raymond R. (1999, June 29). Teaching the Teachers to Teach. *Chicago Sun-Times*.
- Cohen, David K. and Heather C. Hill (2000). Instructional Policy and Classroom Performance: The Mathematics Reform in California. *Teachers College Record*.
- Corcoran, Thomas B. (1995). *Transforming Professional Development for Teachers: A Guide for State Policymakers*. Washington, DC: National Governors Association.
- Corcoran, Thomas B., Patrick M. Shields, and Andrew A. Zucker (1998, March). *The SSIs and Professional Development for Teachers* (SRI Project 3612). Menlo Park, CA: SRI International.
- Darling-Hammond, Linda (1997). *Doing What Matters Most: Investing in Quality Teaching*. New York: National Commission on Teaching and America's Future.
- Darling-Hammond, Linda and Milbrey W. McLaughlin (1995). Policies that Support Professional Development in an Era of Reform. *Phi Delta Kappan*, 76 (8), 597-604.
- Duffrin, Elizabeth (1998, February). Growing A Faculty, *Catalyst* (Special Issue).

- Edmondson, Amy (1999), Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly*, 44 (2), 350-383.
- Elmore, Richard F. (1996). Getting to scale with good educational practice. *Harvard Educational Review*, 66 (1), 1-26.
- Elmore, Richard F. (1997, August). *Investing in Teacher Learning: Staff Development and Instructional Improvement in Community School District #2, New York City*. New York: Teachers College, Columbia University, National Commission on Teaching and America's Future.
- Elmore, Richard F., Penelope L. Peterson, and Susan J. McCarthy (1996). *Restructuring the Classroom: Teaching, Learning, and School Organization*. San Francisco: Jossey-Bass.
- Fenstermacher, Gary and David C. Berliner (1985). Determining the Value of Staff Development. *Elementary School Journal*, 85 (3), 281-314.
- Fullan, Michael (1991). *The New Meaning of Educational Change* (2nd ed.). New York: Teachers College Press.
- Fullan, Michael and Andrew Hargreaves (1992). Teacher Development and Educational Change. In Michael Fullan and Andrew Hargreaves (eds.), *Teacher Development and Educational Change* (1-9). Washington, DC: Falmer.
- Fullan, Michael and Nancy Watson (1997). *Building Infrastructures for Professional Development: An Assessment of Early Progress*. New York: Rockefeller Foundation.
- Guskey, Thomas (1995). Professional Development in Education: In Search of the Optimal Mix. In Thomas R. Guskey and Michael Huberman (eds.), *Professional Development in Education: New Paradigms and Practices* (114-131). New York: Teachers College Press.
- Hass, C. Glen (1957). In-Service Education Today. In Nelson B. Henry (ed.), *In-Service Education for Teachers, Supervisors, and Administrators. The Fifty-Sixth Yearbook of the National Society for the Study of Education, Part I* (13-34). Chicago: University of Chicago Press.
- Havighurst, Charles (1964). *The Public Schools of Chicago*. Chicago: The Board of Education of the City of Chicago.
- Hess, Alfred G., Jr. (1995). *Restructuring Urban Schools: A Chicago Perspective*. New York: Teachers College Press.
- Jarvis, Peter (1987). *Adult Learning in the Social Context*. London: Croom Helm.
- Kennedy, Mary M. (1998, April). *Form and Substance in Inservice Teacher Education*. Paper presented at the annual meeting of the American Educational Research Association, San Diego.
- Leithwood, Kenneth, Lawrence Leonard, and Lyn Sharratt (1998). Conditions Fostering Organizational Learning in Schools. *Educational Administration Quarterly*, 34 (2), 243-276.
- Lenz, Linda (1999, February 4). Securing Professional Development for Teachers. *Chicago Tribune*, Section 1, page 23.
- Lieberman, Ann (1995). Practices that Support Teacher Development. *Phi Delta Kappan*, 76 (8), 591-596.
- Lieberman, Ann and Lynn Miller (Eds.) (1991). *Staff Development for Education in the '90s: New Demands, New Realities, New Perspectives*. New York: Teachers College Press.
- Little, Judith W. (1989). District Policy Choices and Teachers' Professional Development Opportunities. *Educational Evaluation and Policy Analysis*, 11 (1), 165-179.

- Little, Judith W. (1993). Teachers' Professional Development in a Climate of Educational Reform. *Educational Evaluation and Policy Analysis*, 11 (1), 129-151.
- Miles, Karen H. and Linda Darling-Hammond (1997). *Rethinking the allocation of teaching resources: Some lessons from high performing schools* (CPRE Research Report Series RR-38). Philadelphia: Consortium for Policy Research in Education, University of Pennsylvania.
- Miles, Matthew B. (1995). Foreword. In Thomas Guskey and Michael Huberman (eds.), *Professional Development in Education: New Paradigms and Practices* (vii-ix). New York: Teachers College Press.
- National Commission on Teaching and America's Future (1996). *What Matters Most: Teaching for America's Future*. New York: Author.
- National Partnership for Excellence and Accountability in Teaching (1998, September). *Guide to the National Partnership for Excellence and Accountability in Teaching*. College Park: University of Maryland.
- National Staff Development Council (1994). *Standards for Staff Development, Middle Level Edition*. Oxford, OH: Author.
- National Staff Development Council (1995). *Standards for Staff Development, Elementary School Edition*. Oxford, OH: Author.
- Newmann, Fred M., M. Bruce King, and Peter Youngs (2000, April). *Professional Development that Addresses School Capacity: Lessons from Urban Elementary Schools*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.
- Newmann, Fred M. and Karin Sconzert (2000). *School Improvement with External Partners*. Chicago: Consortium on Chicago School Research, Chicago Annenberg Research Project.
- Newmann, Fred M., Anthony S. Bryk, and Jenny Nagaoka (2001). *Authentic Intellectual Work and Standardized Tests: Conflict or Coexistence?* Chicago: Consortium on Chicago School Research, Chicago Annenberg Research Project.
- Newmann, Fred M., Betsy Ann Smith, Elaine Allensworth, and Anthony S. Bryk (2001). *School Instructional Program Coherence: Benefits and Challenges*. Chicago: Consortium on Chicago School Research, Chicago Annenberg Research Project.
- Parker, John C. (1957). Guidelines for In-service Education. In Nelson B. Henry (ed.), *In-Service Education for Teachers, Supervisors, and Administrators. The Fifty-Sixth Yearbook of the National Society for the Study of Education, Part I* (103-128). Chicago: University of Chicago Press.
- Pennell, James R. and William A. Firestone (1998). Teacher-to-Teacher Professional Development Through State-Sponsored Networks. *Phi Delta Kappan*, 79 (5), 354-357.
- Placier, Peggy and Mary L. Hamilton (1994). Schools as Contexts: A Complex Relationship. In Virginia Richardson (ed.), *Teacher Change and the Staff Development Process: A Case in Reading Instruction* (135-159). New York: Teachers College Press.
- Randi, Judi and Lyn Corno (1997). Teachers as Innovators. In B. J. Biddle et al. (eds.), *International Handbook of Teachers and Teaching* (1163-1221). Dordrecht, The Netherlands: Kluwer.
- Raudenbusch, Steven, Anthony S. Bryk, Yuk Fai Cheong, and Richard Congdon (2000). *HLM5: Hierarchical Linear and Nonlinear Modeling*. Lincolnwood, IL: Scientific Software.

- Richey, Herman G. (1957). Growth of the Modern Conception of In-Service Education. In Nelson B. Henry (ed.), *In-Service Education for Teachers, Supervisors, and Administrators. The Fifty-Sixth Yearbook of the National Society for the Study of Education, Part I* (35-66). Chicago: University of Chicago Press.
- Rubin, Linda J. (ed.) (1978). *The Inservice Education of Teachers*. Boston: Allyn and Bacon.
- Sarason, Seymour (1990). *The Predictable Failure of Educational Reform*. San Francisco: Jossey-Bass.
- Schlechty, Phillip and Betty Lou Whitford (1983). The Organizational Context of School Systems and the Functions of Staff Development. In Gary A. Griffin (ed.), *Staff Development: Eighty-Second Yearbook of the National Society for the Study of Education, Part II* (62-91). Chicago: University of Chicago Press.
- Scribner, Jay P. (1999a). Professional Development: Untangling the Influence of Work Context on Teacher Learning. *Educational Administration Quarterly*, 35 (2), 238-266.
- Scribner, Jay P. (1999b). Teacher Efficacy and Teacher Professional Learning: Implications for School Leaders. *Journal of School Leadership*, 9 (2), 209-234.
- Scribner, Jay P., Karen Sunday Cockrell, Dan H. Cockrell, and Jerry W. Valentine (1999). Creating Professional Communities in Schools through Organizational Learning: An Evaluation of a School Improvement Process. *Educational Administration Quarterly*, 35 (1), 130-160.
- Shippo, Dorothy, Joseph Kahne, and Mark A. Smylie (1999). The Politics of Urban School Reform: Legitimacy, City Growth, and School Improvement in Chicago. *Educational Policy*, 13 (4), 518-545.
- Showers, Beverly, Bruce Joyce, and Barrie Bennett (1987). Synthesis of Research on Staff Development: A Framework for Future Study and a State-of-the-Art Analysis. *Educational Leadership*, 45 (3), 77-87.
- Smith, BetsAnn (1998, December). *It's About Time: Opportunities to Learn in Chicago's Elementary Schools*. Chicago: Consortium on Chicago School Research.
- Smith, Julia B., Valerie E. Lee, and Fred M. Newmann (2001). *Instruction and Achievement in Chicago Elementary Schools*. Chicago: Consortium on Chicago School Research, Chicago Annenberg Research Project.
- Smylie, Mark A. (1986). The Enhancement Function of Staff Development: Organizational and Psychological Antecedents to Individual Teacher Change. *American Educational Research Journal*, 25 (1), 1-30.
- Smylie, Mark A. (1989). Teachers' Views of the Effectiveness of Sources of Learning to Teach. *Elementary School Journal*, 89 (5), 543-558.
- Smylie, Mark A. (1995). Teacher Learning in the Workplace. In Thomas R. Guskey and Michael Huberman (eds.), *Professional Development in Education: New Paradigms and Practices* (92-113). New York: Teachers College Press.
- Smylie, Mark A., Robert L. Crowson, Victoria Chou, and Rebekah A. Levin (1994). The Principal and Community-School Connections in Chicago's Radical Reform. *Educational Administration Quarterly*, 30 (3), 342-364.
- Smylie, Mark A. and Ann W. Hart (1999). Leadership for Teacher Learning and Change: A Social and Human Capital Development Perspective. In Joseph Murphy and Karen Seashore Louis (eds.), *Handbook of Research on Educational Administration* (2nd ed., 421-442). San Francisco: Jossey-Bass.

- Sparks, Dennis and Susan Loucks-Horsley (1990). Models of Staff Development: In W. R. Houston (ed.), *Handbook of Research on Teacher Education* (234-250). New York: Macmillan.
- Sparks, Geogianna M. (1986). The Effectiveness of Alternative Training Activities in Changing Teaching Practices. *American Educational Research Journal*, 23 (3), 217-225.
- Spillane, James (1994). How Districts Mediate Between State Policy and Teachers' Practice. In Richard Elmore and Susan Fuhrman (eds.), *The Governance of Curriculum: 1994 Yearbook for the Association for Supervision and Curriculum Development*. Alexandria, VA: ASCD.
- Spillane, James and Charles Thompson (1997). Reconstructing Conceptions of Local Capacity: The Local Education Agency's Capacity for Ambitious Educational Reform. *Educational Evaluation and Policy Analysis*, 19 (2), 85-203.
- St. John, Edward P., James G. Ward, and Sabrina W. M. Laine (1999, August). *State Policy on Professional Development: Rethinking the Linkages to Student Outcomes*. Oakbrook, IL: North Central Regional Educational Laboratory.
- Watson, Nancy, Michael Fullan, and Ann Kilcher (2000, April). *The Role of the District: Professional Learning and District Reform*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.
- Wiley, David and Bokhee Yoon (1995). Teacher Reports of Opportunity to Learn: Analyses of the 1993 California Learning Assessment System. *Educational Evaluation and Policy Analysis*, 17 (3), 355-370.
- Wilson, Suzanne M. and Jennifer Berne (1999). Teacher Learning and the Acquisition of Professional Knowledge: An Examination of Research on Contemporary Professional Development. In Asghar Iran-Nejade and P. David Pearson (eds.), *Review of Research in Education*, Volume 24 (173-209). Washington, DC: American Educational Research Association.
- Youngs, Peter (2000, April). *Connections Between District Policy Related to Professional Development and School Capacity in Urban Elementary Schools*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans.

About the Authors

Mark A. Smylie is a Professor of Education at the University of Illinois at Chicago and a Director of the Consortium on Chicago School Research. He is also Director of the Chicago Annenberg Research Project. Dr. Smylie received his Ph.D. from Vanderbilt University and his B.A. and M.Ed. degrees from Duke University. His research concerns teacher learning and professional development, school leadership, and school and classroom improvement.

Elaine Allensworth is a Senior Research Associate at the Consortium. She received her B.A. in Spanish from Kent State University, her M.A. in Sociology and Urban Studies from Michigan State University, and her Ph.D. in Sociology from Michigan State. Prior to entering graduate school, she was a high school Spanish and science teacher. Elaine has published articles and reports on an array of issues in education, immigration, and community development.

Rebecca C. Greenberg is a doctoral candidate in the College of Education at the University of Illinois at Chicago in educational psychology. She has served as a research assistant on the Chicago Annenberg Research Project and is now studying help-seeking and help-giving behavior among students in classrooms and their academic achievement.

Rodney Harris is a doctoral candidate in the College of Education at the University of Illinois at Chicago in curriculum and instruction. He has served as a research assistant on the Chicago Annenberg Research Project and has worked on several other projects at the Consortium. His dissertation research focuses on the academic and social consequences of connecting classroom instruction to students' out-of-school experiences.

Stuart Luppescu Stuart Luppescu is Chief Psychometrician at the Consortium, specializing in educational measurement. He received B.A. and M.A. degrees in Linguistics from Cornell, an M.A. in English as a Second Language from the University of Hawaii, and a Ph.D. in Educational Measurement from the University of Chicago. Before coming to Chicago, Mr. Luppescu taught English in Japan and Hawaii for 13 years. His research interests are in language acquisition and vocabulary, and in performance assessment.

This report reflects the interpretations of the authors. Although the Consortium's Steering Committee provided technical advice, no formal endorsement by these individuals, their organizations, or the full Consortium should be assumed.

Steering Committee

Victoria Chou, Co-Chair
University of Illinois at Chicago

James H. Lewis, Co-Chair
Roosevelt University

Consortium on Chicago School Research

Mission

The Consortium on Chicago School Research is an independent federation of Chicago area organizations that conducts research on ways to improve Chicago's public schools and assess the progress of school improvement and reform. Formed in 1990, it is a multipartisan organization that includes faculty from area universities, leadership from the Chicago Public Schools, the Chicago Teachers Union, education advocacy groups, the Illinois State Board of Education, and the North Central Regional Educational Laboratory, as well as other key civic and professional leaders.

The Consortium does not argue a particular policy position. Rather, it believes that good policy is most likely to result from a genuine competition of ideas informed by the best evidence that can be obtained.

Institutional Members

Chicago Public Schools

Christy Carter
for the Chicago Board of Education

Olivia Watkins
for the Chief Executive Officer

Philip Hansen
Accountability Office

Chicago Academic Accountability Council

Bruce Marchiafava
Executive Officer

Illinois State Board of Education

Connie Wise
for the Superintendent

Individual Members

John Ayers
Leadership for Quality Education

Gina Burkhardt
North Central Regional Educational Laboratory

Michael E. Carl
Northeastern Illinois University

Molly A. Carroll
Chicago Teachers Union

Louis M. Gomez
Northwestern University

Anne C. Hallett
Cross City Campaign for Urban School Reform

G. Alfred Hess, Jr.
Northwestern University

Rachel W. Lindsey
Chicago State University

George Lowery
Roosevelt University

Angela Perez Miller
DePaul University

Donald R. Moore
Designs for Change

Sharon Ransom
University of Illinois at Chicago

Barbara A. Sizemore
DePaul University

Linda S. Tafel
National-Louis University

Beverly Tunney
Chicago Principals and Administrators Association

Quintin Vargas, III
DePaul University

Directors

Anthony S. Bryk
University of Chicago

John Q. Easton
Consortium on Chicago School Research

Albert L. Bennett
Roosevelt University

Sarah-Kay McDonald
Consortium on Chicago School Research

Melissa Roderick
University of Chicago

Penny Bender Sebring
University of Chicago

Mark A. Smylie
University of Illinois at Chicago



Consortium on Chicago School Research
1313 East 60th Street, Chicago, IL 60637
773-702-3364 fax -773-702-2010
www.consortium-chicago.org

Improving Chicago's Schools

Sponsored by
the Chicago Annenberg Research Project
with assistance from
the Consortium on Chicago School Research

The Chicago Annenberg Research Project is a five-year program of the Consortium on Chicago School Research to document and analyze the activities and accomplishments of the Chicago Annenberg Challenge. The project focuses on four related areas of inquiry.

1. **Outcomes for students.** Change in academic achievement, including basic skills and higher levels of learning. Also change in social attitudes, conduct, and engagement among students in Annenberg schools.
2. **School development.** Improvement in key organizational conditions of Annenberg schools that affect student learning. These conditions include school leadership, parent and community partnerships, student-centered learning climate, professional development and community, and quality instruction, as well as the Challenge's organizational themes of time, size, and isolation.
3. **Networks.** How networks, their external partners, and other change mechanisms promote the development of Annenberg schools.
4. **Larger contexts needed to support school development.** How the Challenge develops as an organization to support networks and school development. How the broader institutional contexts of Chicago affect the development and accomplishments of the Challenge.

The project's research design includes longitudinal surveys and case studies, multiple levels of analysis, and comparison groups. Data are collected from several sources including surveys of teachers, principals, and students; observations of schools and classrooms; classroom tasks and student work products; interviews; documents of Challenge activities; and administrative records from the Chicago Public Schools.