PBS TeacherLine National Survey of Teacher Professional Development

2005-2006

Hezel Associates, LLC
1201 E. Fayette St.
Syracuse, NY 13210
315-422-3512
hezel@hezel.com

PBS TeacherLine, an initiative funded under the U.S. Department of Education's Ready To Teach program, is designed to provide high-quality online professional development for K-12 teachers. Through the first five-year grant cycle, ending in 2005, PBS TeacherLine produced approximately 100 online, facilitated courses in reading, mathematics, science, instructional strategies, instructional technology, and curriculum mapping. In the new grant period, PBS TeacherLine is creating a 21st century digital professional development model for online professional and organizational learning and support.

During the first year, the evaluation team designed and carried out a series of studies of teacher professional development and instructional coaching, with particular concern for Title I and underperforming schools, in order to better understand the context of teacher professional development as well as to inform the developmental effort for the coaching resource prototype. These include a national survey of more than 1400 school teachers and administrators and follow-up case studies, a study of PBS facilitators who also coach, an instructional coaching literature review, a study of Educational Service Agencies, and a coaching needs assessment study.

Key findings from the national survey are detailed below. Most notably, results indicate principals and assistant principals assume significant responsibility with regard to planning and implementing teacher professional development in their schools. Responses also pointed to a number of conflicting beliefs among the groups surveyed. Further study findings indicate an intricate relationship among contexts, activities and decisions surrounding teacher professional development at school and district levels.

NATIONAL SURVEY OF TEACHERS AND ADMINISTRATORS

Basic findings from the surveys are given first, followed by findings summarizing the district, school, and demographic factors influencing survey responses.

1. Basic Findings

- District and school leadership differ on perceptions of responsibility for teacher professional development and on some perceptions of influence on the development or selection of PD options. Superintendents tend to say that the district assumes primary responsibility for organizing and initiating teacher PD, while principals and tend to say that school principals or assistants assume primary responsibility. Superintendents also rate teachers and coaches as more influential in the selection or development of PD options than do principals.

- Schools, through school improvement plans and leadership, have a strong influence in district PD planning as well as in affecting the options that teachers ultimately

choose. Principals and school improvement plans are rated as having the most influence on district decision making in the development/selection of PD options, ahead of superintendent (individually) and staff development coordinator (individually). Given the menu of PD options, teachers rate themselves, their principals, and their school improvement plan more highly than any district entity as influences on their choice of activities to undertake.

- An unexpectedly large proportion of both superintendents and principals (28%; 36%) indicate that principals have primary responsibility for selecting external purchases of PD materials or services. At least 38 percent of teachers report school-based sources of funding for their PD activities. Together, these findings suggest a fair amount of discretionary authority at the school level to select and purchase materials and services specific to their needs.

- Large differences in perception (e.g., 20%-30%) exist between teachers and principals about the activities used for PD needs assessment. In general, principals are much more likely than teachers to report that any activity (e.g., classroom observation) is used to assess teacher needs for professional development. For instance, 57 percent of teachers report that classroom observations are sometimes or often used to assess teacher needs for professional development, as opposed to 84 percent of principals.

- As with the data on needs assessment, principals report a higher frequency of use than teachers for the major listed methods for the evaluation of teacher PD. Taken together with the needs assessment findings, this suggests a lack of communication between principals and teachers about, for example, the use of student performance data and the purpose of classroom observations.

- District and school leadership differ on the reported use of instructional coaching as part of teacher professional development. Forty-six percent of superintendents, but 65 percent of principals, say that instructional coaching is used in the district as part of teacher PD.

- Schools and districts have technology available for PD, are generally supportive of the use of the Internet to deliver PD, but are just moderate users of technology (of any form) for PD delivery. Survey respondents most typically reported that just "some" of PD activities are delivered via technology. Findings in all three of these areas (infrastructure, support, and use) were consistent across superintendents, principals, and teachers.

- Teachers most frequently spent their PD time in the last year on workshops, conferences, and teacher committees or task forces. The majority of teachers spent no time in the past year on college courses (69%), online courses or modules (76%), internships (89%), research projects (67%), or instructional coaching (62%).

- Online professional development is often paid for out of pocket. Seventy-three percent of teachers pay in full or in part for taking online courses/modules. This is exceeded only by the percentage paying for face to face college courses (87%).

- About two thirds of teachers reported being comfortable or very comfortable participating in online courses/modules. However, of all uses of technology listed on the survey, teachers were least comfortable with this activity and nineteen percent reported being "not very comfortable" with it. Similarly, about two thirds of teachers said they would be interested or very interested in participating in an online activity as part of their professional development.

- Teachers rated face to face college courses, workshops, and conferences most highly for both increased subject area knowledge and impact on instruction. Instructional coaching did not fare particularly well for either outcome.

2. District and school factors related to survey responses

- District use of instructional coaching for teacher professional development is related to several district and school variables. As district (and school) location changes from rural to more urban areas, instructional coaching is more likely to be used. District proportions ranged from 36 percent (rural) to 69 percent (city). A similar, and likely related, finding shows that larger districts (in terms of number of students) were more likely to use instructional coaching than smaller districts.

- Support for using the Internet to deliver professional development is related to district locale. Town (44.2%) and rural (43.8%) superintendents were more likely to indicate strong district support for using the Internet to deliver PD compared to urban fringe (30.9%) and city (23.8%) superintendents.

- Low SES, in terms of the proportion of free and reduced price lunch (FRPL) students, appears to be related to more centralized control of teacher professional development. The higher the percentage of FRPL students, the more likely principals are to rate the district superintendent as highly influential in decision making about teacher professional development. At the same time, the higher the proportion of FRPL students the less likely teachers are rated as highly influential.

- Greater school size appears to be related to greater school responsibility for, and control of, teacher professional development. Principals in larger schools are more likely to indicate that they (or their assistant) assume the responsibility for organizing and initiating teacher professional development, as opposed to the district. Similarly, the larger the school the more likely it is that teachers indicate that the school principal or assistant principal assumes the responsibility for organizing and initiating teacher PD rather than the district.

PBS TeacherLine, an initiative funded under the U.S. Department of Education's Ready To Teach program, is designed to provide high-quality online professional development for K-12 teachers. Through the first five-year grant cycle, ending in 2005, PBS TeacherLine produced approximately 100 online, facilitated courses in reading, mathematics, science, instructional strategies, instructional technology, and curriculum mapping.

The initiative is now in its second five-year phase. In the new grant period, PBS TeacherLine is creating a 21st century digital professional development model for online professional and organizational learning and support. The plan is to enable districts to leverage their local competencies while augmenting them with cost-effective, research-based, flexible online supports. The project will reconfigure elements in TeacherLine's current array of high-quality courses and design a series of new TeacherLine resources that build on and extend existing materials.

Hezel Associates undertook multidimensional research in 2005-2006, the first year of the new grant, to inform the developmental effort and to explore the context in which the materials and resources will ultimately be integrated. Several study reports, particularly those informing the developmental effort, have been delivered to PBS TeacherLine. The current report focuses on the national survey of district and school administrators and teachers undertaken to better understand the national professional development context. This study gathered information on the organization and management of teacher professional development in schools and school districts, the relation between school-level and district-level professional development activities and decision-making, and the role of technology in supporting professional development efforts.

During the first year, the evaluation team designed and carried out a series of studies of teacher professional development and instructional coaching, with particular concern for Title I and underperforming schools. The method for the national survey, conducted in Spring 2006, is summarized below.

NATIONAL TEACHER PROFESSIONAL DEVELOPMENT SURVEY

The national survey and studies were designed to support PBS TeacherLine's decisions and strengthen its ability to transform professional development by addressing the foundational questions:

- What are the types, ranges, and mix of professional development models in schools and school districts, particularly in low performing and Title I settings?
- What is the relation between school-level and district-level professional development models, activities, and decision-making?
- What is the role of technology in supporting professional development efforts, again with particular regard to Title I settings? What conditions contribute to districts', schools' and teachers' active use of technology in support of professional development?

Prior to fielding the national survey, Hezel Associates reviewed the research literature on the organization and management of teacher professional development, then drafted and piloted an administrator survey that targeted a representative, national sample of 150 school districts.

For the national survey, the Hezel Associates evaluation team employed a sampling strategy similar to one developed by SRI in its national study of Title I programs (SRI, 2003). Information from the Common Core of Data (CCD) was used to develop the universe of eligible districts. Educational Service Agencies (ESA's) are listed in the CCD as a district type, and these were excluded for this study. Eligible districts (14,056) were stratified according to size/student population. From this group we sampled 1500 districts evenly and randomly within the following five strata of student population, resulting in 300 sampled districts within each stratum:

Student population	Total number of districts	Target number of districts sampled
100-999	6712	300
1000-2499	3467	300
2500-4999	2021	300
5000-10000	1032	300
>10000	824	300
Total	**14056**	**1500**

The decision to stratify and sample evenly within these strata is based on a highly skewed distribution of district size (about 75% within the first 2 categories). Therefore, a representative sample would contain very few large districts.

In order to increase the response among administrators in the national survey, we undertook a second round of sampling after approximately eight weeks. In the first sample, from the universe of districts (excluding pilot districts and ESA's), the evaluation team selected a total of 1496 districts using simple random sampling without replacement within each stratum. For the second sample of districts, excluding the districts previously selected, the evaluation team selected 1404 districts using the same sampling strategies as for the first sample (i.e., we sampled randomly within the five strata of school size).

For the school sample, the evaluation team sampled a random subset of 600 districts in each of the larger district samples (within the size strata), in order to allow for more than one school per district. From these, a random sample of 1222 schools was selected in the first round, and 1191 in the second round, both chosen evenly within the size strata. District superintendents received surveys in the district sample, and school principals and a random two teachers per school were surveyed at the school level. Two different surveys were developed, one for administrators (both superintendents and principals) and one for teachers. This sampling strategy was later reflected in the use of Complex Sampling Analysis to analyze the survey data.

1. National survey topics

Based on the review of relevant literature, existing measurement instruments, and results from the pilot survey, the evaluation team developed the following areas to be targeted in the survey:
- the range of professional development approaches the school district engages in
- the factors and decisions that underlie the development and selection of professional development models in use
- the coherence of the provision of professional development across districts and within schools
- the locus of control for professional development and decision making regarding participation in professional development activities (district, school, teacher, combination)
- needs and priority areas for professional development
- evaluation of professional development
- factors influencing the choice of internal vs. external professional development provision
- the extent to which technology is featured in professional development activities (other than as a content are itself)

Based on these areas, the evaluation team organized questions into topical areas for both administrators and teachers. The surveys also collected demographic and background information on job experience, ethnicity, gender, education, etc. The surveys contain a series of close-ended and open-ended questions that ask participants to provide information on:

Administrators:
- Organization of Professional Development
- Allocation of Resources for Professional Development
- Evaluation of Professional Development
- Technology Use in Professional Development
- State Department of Education Initiatives

Teachers:
- Selection of Professional Development Activities
- Organization of Professional Development
- Evaluation of Professional Development
- Funding for Professional Development
- Technology use in Professional Development Activities
- Learning from Professional Development

2. National survey administration

All surveys were initially administered online, and hardcopies were made available as part of the final communication. The superintendent and principal samples received four communications that included postcards, e-mail message, letter, and finally hardcopies of the survey with a cover letter. We completed three drops of communications with teachers. These included: 1) emails and letters, 2) emails and postcards, and 3) hardcopies with cover letter.

To optimize response rates, all respondents receive a Barnes & Noble gift certificate, mailed or e-mailed to them upon submission of the completed survey. Listed below are the descriptive statistics for the first and second sample of administrators and for the teacher sample.

Administrator sample:
- Superintendents: 500 out of 2901; response rate of 17.2%
- Principals: 431 out of 2413; response rate of 17.9%
- Combined: 710 out of 5314; response rate of 17.5%

Teacher sample:
- 761 responses out of 2017 mailings; response rate of 37.7%

3. National survey data analysis

The datasets were cleaned and merged with the Common Core of Data at the district or school level (as appropriate) in order to bring in the variables of interest. The final preparation for analysis involved the development of sample weights to reflect our sampling design. Complex sampling analysis considers the stratification and different stages of sampling and requires adding weighting and stratum variables to the dataset. The weight at the district or school level is directly proportional to the number of districts or schools in the stratum (and thus is inversely proportional to the chance of being selected). Teacher weights were based on the number of teachers in each sampled school, a variable present in the CCD. Using the Complex Sampling Module in SPSS, frequencies of response are estimated for the population, based on these weights, rather than reported raw for the sample.

Three levels of analysis were undertaken. First, we ran frequency distributions for all closed-ended responses and tabulated results in charts, graphs or tables. Open-ended responses were coded according to a thematic classification system and results tabled. See Appendices for these basic analyses.

At the second level of analysis, we cross-tabulated selected survey question responses by characteristics of the respondents' schools or districts. District characteristics (as measured by CCD variables) include district locale, percent of students qualifying for free and reduced lunch, total number of students, and per-pupil expenditure, all at the district level. School characteristics include school locale, percent free and reduced lunch, total number of students, and per-pupil expenditure, all at the school level. To facilitate breakdowns, quantitative variables (e.g., number of students, per-pupil expenditure) were recoded into either two or three groups. For example, per-pupil expenditure was recoded into two groups based on the median, and student population variables were split into three groups of approximately equal size. Finally, some of the district and school locale categories were collapsed based on variability, resulting in the four categories of rural, town, urban fringe, and city.

We also looked at the same survey question responses by certain respondent demographics. Demographic variables for administrators included years of experience at the district or building, and for teachers characteristics such as gender, years of job experience, education level, subjects taught, and grade level.

In this section we first present basic frequencies of response to questions on the administrator and teacher surveys. Since the frequencies are based on a weighted estimate for the population rather than the raw sample data, an "N" for the analyses is not given. In addition, as noted above in Methods, we conducted a number of comparative analyses between superintendents and principals, and between principals and teachers. We also looked at superintendent, principal, and teacher responses broken down by district and school characteristics as well as by respondent demographics. Selected findings from these analyses are presented below.

## 1. Administrator Survey Responses

Due to the different levels of sampling (district and school), and the different weights associated with each level, it is not possible to combine superintendent and principal responses into an overall "administrator" analysis. Basic descriptive statistics are tabled or charted in the Appendices for all responses separately for superintendents and principals. However, since both groups received the same questions, we can compare their response frequencies after the weights have been applied. Below, after a demographic summary, we summarize similarities and differences in selected responses between superintendents and principals. Findings are organized by the topical areas noted in the Methods section.

The superintendent sample is predominately white (93%), and nearly two thirds (63%) male. Close to three fourths have at least a Master's degree, and about 34 percent have earned a doctorate. About 43 percent of superintendents have less than 10 years' experience at the district level, and close to two thirds have worked at their current district for less than ten years. The principals in our sample are also predominantly white (84%) but approximately equally divided in terms of gender (52% female). Close to three fourths have at least a Master's degree, but principals are much less likely than superintendents to have earned a doctorate (9%). About 64 percent of principals have spent less than ten years in administration, and a slightly higher percentage (68%) said they had less than ten years at their current building.

Organization of Professional Development
Superintendents and principals have significantly different perspectives on who has the primary responsibility for organizing and initiating teacher professional development (Figure 1). Principals are more likely to perceive principals or assistant principals as assuming this responsibility, while superintendents are more likely to view it as the district or the educational service agency's primary responsibility.

Figure 1.   Who assumes the primary responsibility for organizing and initiating teacher professional development?
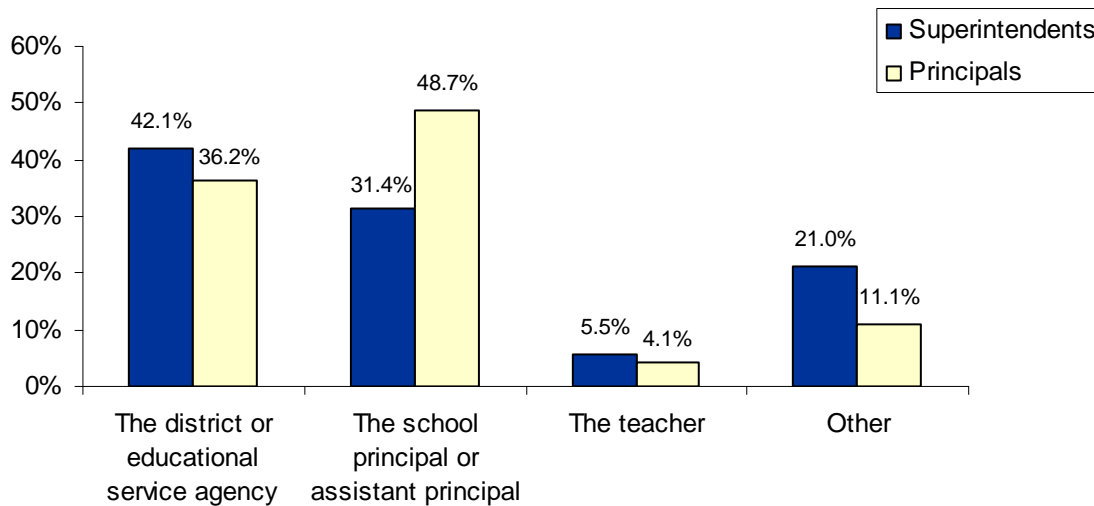
Superintendents and principals generally agree on what entities most influence district decision making in the development or selection of professional development activities. Superintendents are more likely to ascribe a strong influence to the staff development coordinator, but comparable proportions of superintendents and principals (62%-69% for both) feel that the school improvement plan and school principals/assistant principals are highly influential in this decision making. Likewise, both (55%-60% each) feel that the superintendent is highly influential. One interesting difference is that superintendents are much more likely than principals to rate teachers as highly influential in this process (67% compared to 52%). They are also somewhat more likely than principals to rate coaches as highly influential (44% compared to 38%), in districts or schools that have instructional coaching.

Superintendents and principals report differently on the use of instructional coaches in the provision of teacher PD, with a much higher percentage of principals reporting such a use (Figure 2). However, as with the figures just reported on the influence ascribed to instructional coaches in the development of PD activities, superintendents are more likely than principals (44% compared to 38%) to say that feedback from instructional coaches is often used to assess teachers' professional development needs, in districts or schools that have instructional coaching. The prevalence of use of most other sources of information on teacher PD needs (classroom observations, surveys of instructional practices, etc.) is rated comparably between superintendents and principals.

Figure 2.   Reported use of instructional coaching in the district as part of teacher professional development
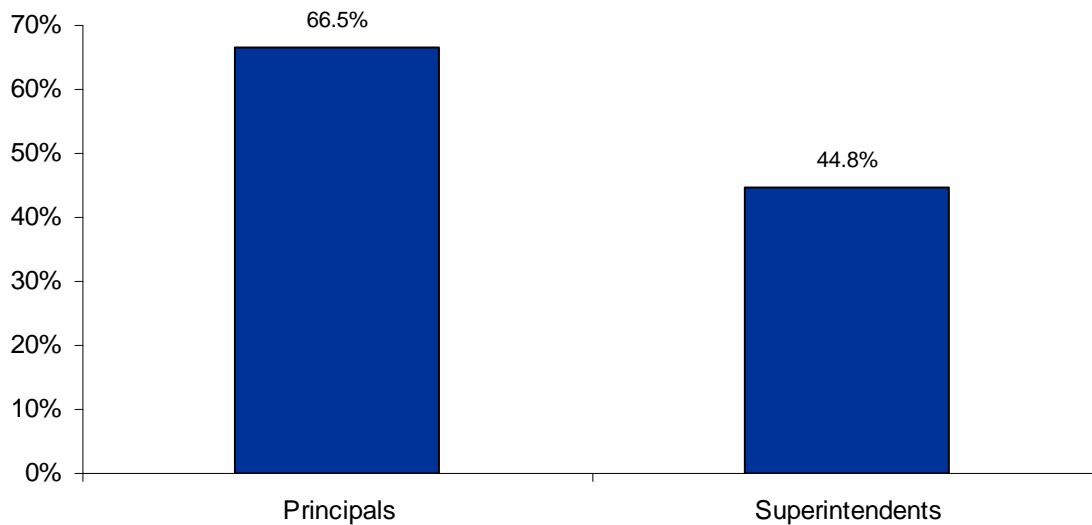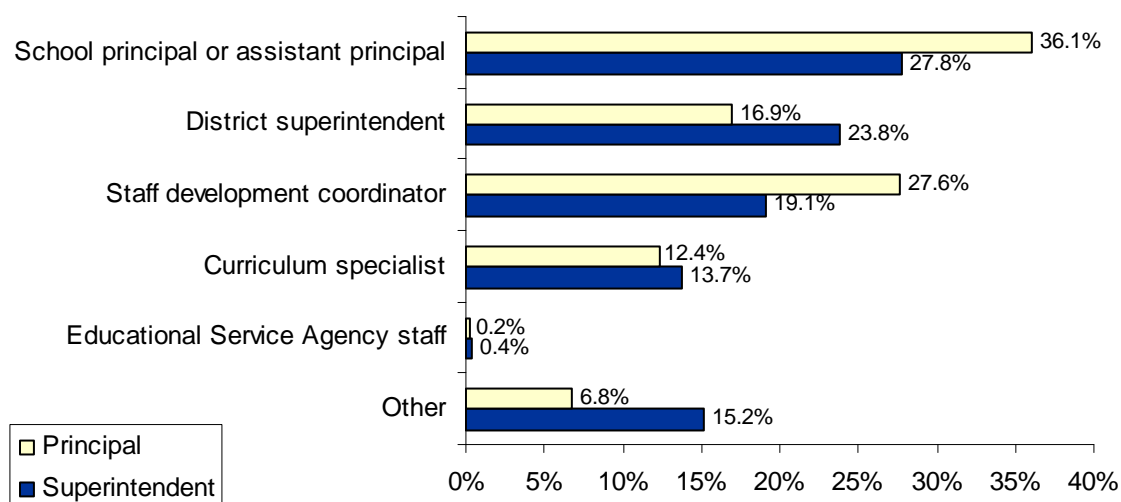

In terms of the PD activities or formats that count towards teachers' required professional development hours (e.g., workshops, college courses, online courses, conferences, etc.), superintendents and principals agree very closely on almost all. However, in districts with instructional coaching, superintendents (55.4%) are more likely than principals (42.4%) to say that it counts toward the required hours.

Allocation of resources for professional development
Districts appear to allocate roughly comparable amounts of district funds on internally developed materials or services and purchased products or services. A much larger proportion of principals (38%) than superintendents (7%) say they don't know the proportions of the district budget spent on internal versus external products and services. Although a greater proportion of principals than superintendents also say they don't know what forms the external purchases most often take, they agree that expenditures on workshops and presentations are much higher than on online resources or services, or on instructional or curricular materials. Interestingly, unexpectedly large proportions of both superintendents and principals indicate that the school principal or assistant principal is the person with the primary responsibility for selecting external purchases (Figure 3).

Figure 3. Who has primary responsibility for selecting external purchases?

Chart data:

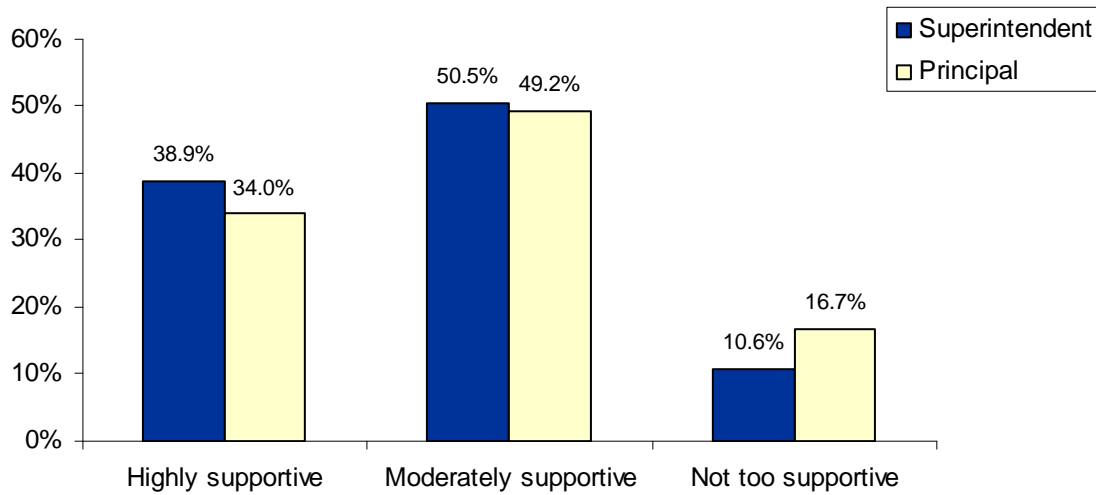| Category	Principal	Superintendent
School principal or assistant principal	36.1%	27.8%
District superintendent	16.9%	23.8%
Staff development coordinator	27.6%	19.1%
Curriculum specialist	12.4%	13.7%
Educational Service Agency staff	0.2%	0.4%
Other	6.8%	15.2%

Evaluation of professional development

Both superintendents and principals report that teacher professional development activities are most likely to be evaluated either annually (most frequently chosen response), or after each activity. Very few respondents (less than 5%) said that PD activities are never evaluated. According to about 2/3 of both superintendents and principals, professional development is always or frequently evaluated for evidence of improvement in instructional practice.

Districts and schools evaluate teacher professional development through various means. Superintendent and principal profiles on these are very similar, and teacher survey is the format that the greatest proportion of superintendents (86.0%) and principals (83.1%) report being used. Superintendents report greater emphasis than principals on the use of state and local exams, as well as on in-class observations of teachers, for evaluating teacher PD. Teachers and administrative teams or committees are the most frequently mentioned evaluators of PD activities.

Technology use in professional development

According to about two thirds of superintendents and principals, teacher professional development is always or frequently offered to support the use of technology products purchased by the district. School districts are moderately to highly supportive of the use of the Internet to deliver professional development content, according to most principals and superintendents (Figure 4).

Figure 4.   How would you characterize your school district's stance on the use of the Internet to deliver professional development content?


District and schools are technologically wired. Over 95 percent have computer and internet access, and 90-95 percent have TV/VCR. More superintendents (57.5%) than principals (40.8%) report that videoconferencing is available to teachers in the district for professional development activities. This may simply imply a central district location for this capability.

We asked a couple of questions to try to distinguish the use of technology to deliver PD from technology as the content of PD. Responses to the question on use of technology to deliver PD are shown in Figure 5. Superintendent and principal responses are quite similar. Just over a third of both groups report that most or almost all activities use technology as a means of conveying information to teachers.

Figure 5.   What proportion of your district's professional development activities use technology as a means of conveying information to teachers?
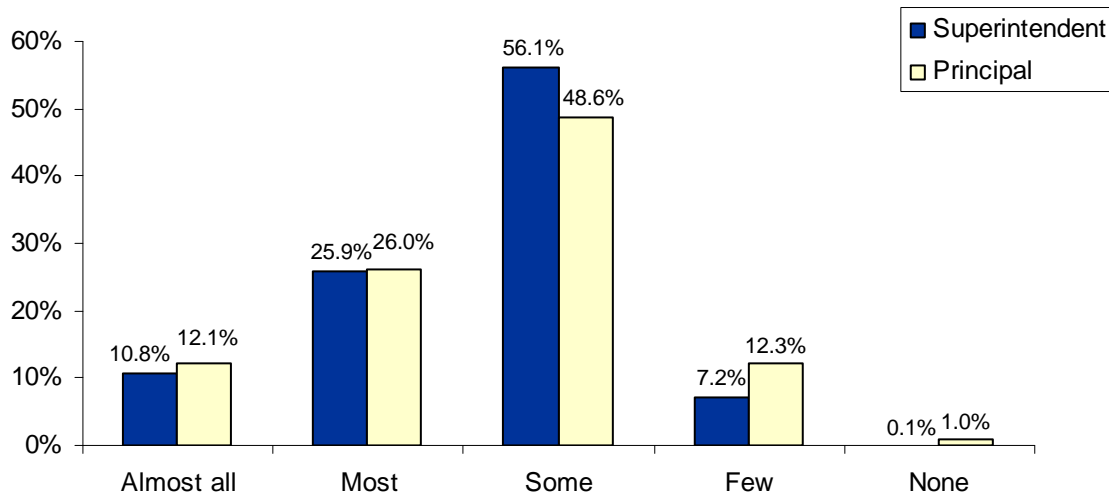
Taken together with the question on access to technology for PD, these findings suggest that districts have technological infrastructure available for PD that is not being used for this purpose.

2. Teacher Survey Responses

The national teacher survey contains a series of close-ended and open-ended questions that ask participants to provide information on:

- Selection of Professional Development Activities
- Organization of Professional Development
- Evaluation of Professional Development
- Funding for Professional Development
- Technology use in Professional Development Activities
- Learning from Professional Development

The survey also collected information on job experience, grade level, ethnicity, gender, education, and subject taught. Below, after a demographic summary, we summarize teacher responses to selected questions. (Basic descriptive statistics are tabled or charted in the Appendices for all responses.) Some of the questions on this survey overlap with those on the administrator survey, and for these questions teacher responses are compared with principal responses.

Of the sample of 761 teachers, 85 percent are female and 86 percent are white, with less than seven percent from any of the other ethnic groups. All grade levels are well represented, although a smaller proportion of respondents teach in the middle grades (6-8) than in elementary or high. Almost all (99%) are certified, and 52 percent have at least a Master's degree. Over a third (37%) have less than 10 years of teaching

experience. Close to 2/3 of the sample has been teaching at their current school for less than ten years.

Organization and Selection of Professional Development Activities
Teachers and principals have different perspectives on who has the primary responsibility for organizing and initiating teacher professional development (Figure 6). Compared to principals, teachers report this responsibility more frequently as their own or the district's and less frequently as the principal's.

Figure 6.   Who assumes the primary responsibility for organizing and initiating teacher professional development?
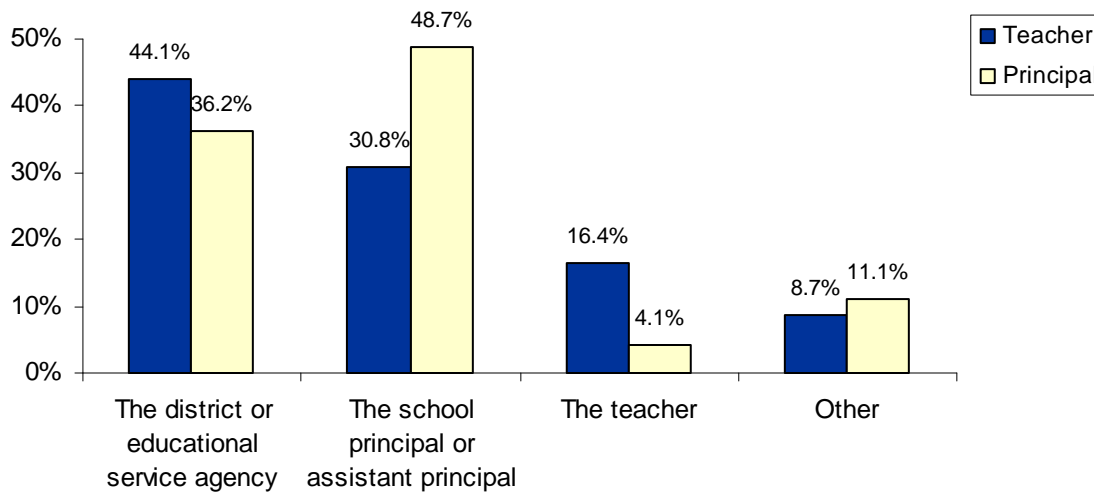
We wanted to learn about the various influences on teachers' choice of professional development activities. Results are shown below in Table 1. It is clear that in addition to themselves, teachers rate school-based influences such as the principal and the school improvement plan as highly as or more highly than district entities.

Table 1.   How much influence do the following have on your choice of professional development activities?

	No influence	Very little influence	Somewhat influential	Highly influential	N/A
District superintendent	15.9%	18.5%	32.8%	28.8%	4%
Staff development coordinator	7.4%	11.5%	28.8%	39%	13.4%
State department of education	11.5%	16.6%	35.1%	32.3%	4.5%
County department of education	20%	19.2%	22.8%	19%	19.1%
Educational service agency	28.7%	24.6%	15.2%	6.5%	25%
Local school board	24.4%	30.6%	25.3%	13.6%	6%
School principal or assistant principal	3.3%	7.4%	39.8%	49.3%	.2%
Teachers' instructional coaches	14.6%	14.7%	27%	17.1%	26.5%
Teachers' unions	36.5%	27.3%	17.7%	5%	13.6%
Curriculum specialists	8.6%	16.6%	34.7%	32.5%	7.5%
School site council or parent association	43.5%	28.5%	13%	2.6%	12.4%
Colleges or university partners	36.1%	25.8%	14.1%	4.8%	19.3%
School improvement plan	6.9%	11.6%	37.7%	40.5%	3.4%
Self	12.6%	17.9%	17.5%	49.8%	2.2%

Teacher needs for professional development are assessed in a variety of ways. Our findings indicate large differences in perception (in the range of 20-30%) between teachers and principals about the frequency of use for almost all options. For instance, 57 percent of teachers report that classroom observations are sometimes or often used to assess teacher needs for professional development, as opposed to 84 percent of principals. Discussions between the teacher and principal to assess teacher PD needs are reported by 74 percent of teachers but 96 percent of principals. Feedback from instructional coaches (in districts with coaching) is cited by 55 percent of teachers but 77 percent of principals.

In general, principals are much more likely than teachers to report that an activity (e.g., classroom observations, surveys, discussions between teachers and administrators, etc.) is used to assess teacher needs for professional development. This may imply that many teachers do not know the purpose of the activities, but in any case indicates a major difference in perception.

Over the year preceding the survey, teachers have been involved in various activities for their professional development (Table 2). For a number of the activities listed, most teachers indicated no involvement (e.g., face to face college courses, online courses/modules, internships, research projects, coaching). Workshops, conferences, and teacher committees are what many teachers have spent the most time on for professional development.

Table 2.   Over the past year, approximately how many hours have you been involved in the following professional development activities?

|	1-5 hours	6-10 hours	11-15 hours	More than 15 hours	Was not involved
Workshops	11.4%	17.5%	16%	51.8%	3.2%
College Courses (face to face)	6.5%	4.4%	1.8%	18.6%	68.7%
Online courses/modules	10.3%	4.7%	1.3%	7.4%	76.3%
Conferences	24.8%	18.7%	13.4%	21.85	21.3%
Internships	4.1%	1.2%	.5%	4.5%	89.7%
Individual or group research project	9.3%	7.1%	5.6%	10.8%	67.2%
Instructional coaching	11.5%	7.9%	5.1%	13.4%	62%
Observation of other teachers' classes	35.9%	6.9%	4.9%	5.6%	46.7%
Involvement in teacher study groups	15.8%	12.8%	10.1%	13.5%	47.8%
Use of teacher resource center	21.9%	9.7%	5.4%	7.8%	55.2%
Participation on teacher committee or task force	18.4%	14.4%	11.4%	24.6%	31.2%
Completing requirements for National Board Certification	4.3%	1.5%	2.7%	7.4%	84%
Other	1%	1.2%	1%	7%	89.8%

Evaluation of professional development

Teacher professional development is evaluated through various means. Teachers' and principals' profiles of reported use of these measures are very similar in terms of the relative proportions between categories. However, as with the question on needs assessment, principals report a higher frequency of use for all. Also, more teachers don't know how evaluation of their professional development is conducted. Together these suggest a lack of communication between principals and teachers about, for instance, the use of student performance data and the purpose of classroom observations.

Funding for Professional Development

According to teachers, the district tends to provide the source of funding for most professional development (Figure 7). However, school-based sources also exist, generally dispensed or approved by the principal. A relatively large proportion of teachers (about 39%) also contribute funds to their professional development. In the Other category, the most frequent item listed was Grants.

Figure 7. In general, who provides you with funding for your professional development activities (Not counting mandatory in-service training)? (check all that apply)

	The district	Self	Your principal	Your department chair	Other
	76.0%	39.1%	37.5%	6.7%	8.5%
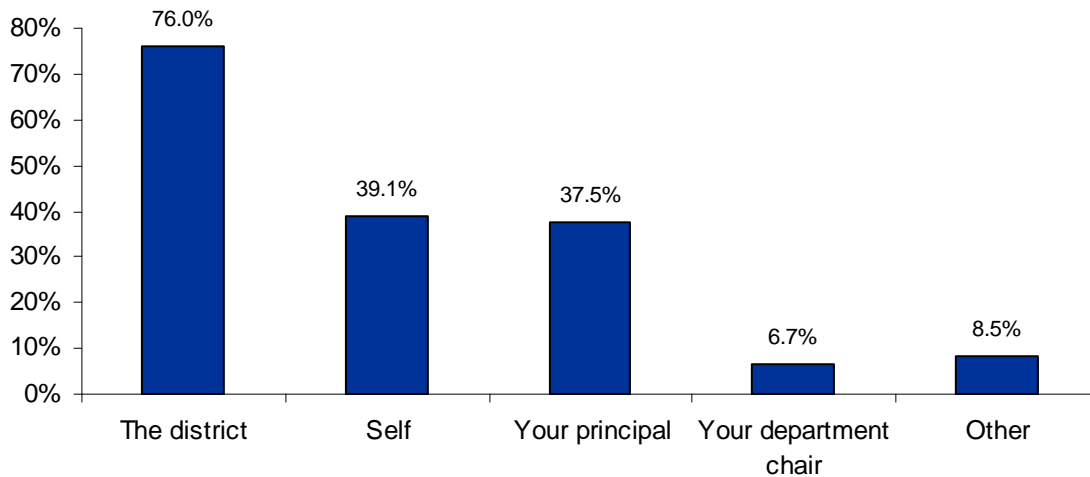
When teachers were asked the extent to which they are personally financially responsible for various professional development activities, responses suggested teachers bore a fair amount of the cost, particularly for online or college courses (Table 3).

Table 3. To what extent are you personally financially responsible (e.g. beyond your operating/classroom budget) for the following professional development activities?

	I pay in full	I pay part	I do not pay
Workshops	11.6%	16.2%	72.2%
College courses (face to face)	63.9%	22.6%	13.5%
Online courses/modules	56.2%	16.8%	27%
Conferences	19.4%	23.2%	57.3%
Internships	25.5%	4.4%	70.1%
Individual or group research project	23.4%	10%	66.6%
Completing requirements for National Board Certification	39.9%	19.9%	40.2%
Other	8.4%	2.3%	89.3%

Technology use in professional development

Teachers' reported access to technology (computer, Internet, TV/VCR, video-conferencing) for professional development largely mirrors that reported by principals. Teachers' reported comfort level with technology is generally high. Most teachers are comfortable or very comfortable using a TV/VCR (98%), using email (96%), and conducting Internet searches (91%). Teachers are somewhat less comfortable downloading or uploading documents on the Internet (82%) and viewing video online (76%). Teachers are least comfortable participating in online courses/modules (66%). For the latter, 19 percent indicated that they were "not very comfortable" with this activity.

Consistent, apparently, with this finding on comfort with online learning, two thirds of teachers said they would be interested or very interested in participating in an online activity as part of their professional development (Figure 8). A close inspection of responses indicates an overlap of about 75 percent between those who indicated comfort and those who indicated interest.

Figure 8. How interested would you be in participating in an online activity as part of your professional development?
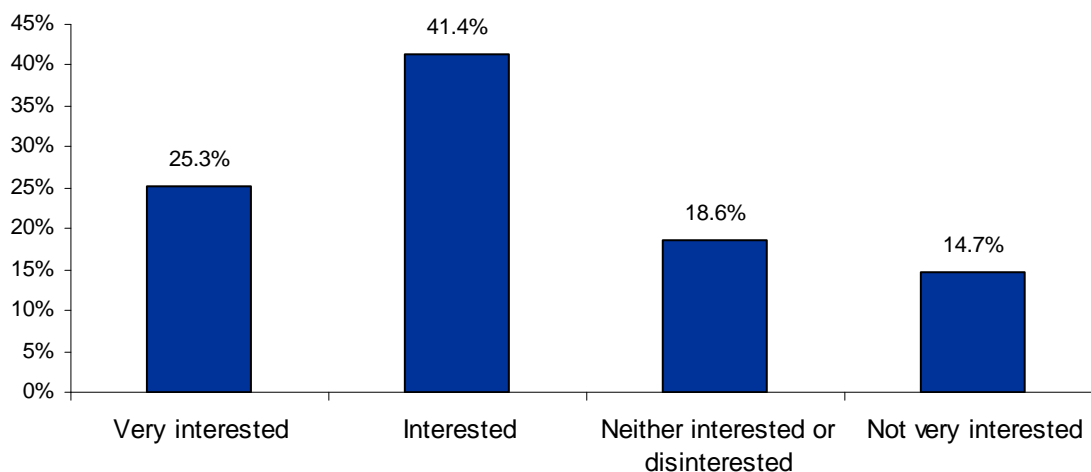
When asked how much time would be reasonable to spend in an online professional development activity that lasted one month, about 60 percent of teachers indicated that one to two hours per week was reasonable, and about another 31 percent would expect to spend three to four hours a week. Four hours appeared to be a cut-off point for teachers.

District support for the use of the Internet to deliver professional development was reported comparably between teachers and principals. Approximately 83 percent of both groups perceive that the district is moderately or highly supportive. Teachers and principals also report comparably on the proportion of professional development activities that use technology as a means of conveying information to teachers. About 38 percent of both groups report that most or almost all PD activities use technology in this way.

Learning from Professional Development
As noted above (Table 2), teachers reported involvement in various professional development activities over the past year, and we were interested in getting teachers' feedback on the perceived impact of these activities. We asked about learning in the subject area as well as positive impact on instructional strategies. Table 4 below shows the results for learning in the subject area, excluding, for each activity, teachers who did not participate in that activity (See Table 25 in the Appendix for the raw response data).

Table 4 shows that face to face college courses, workshops, and conferences were rated most highly for this form of learning. Instructional coaching (7th entry) did not fare as well.

Table 4.   To what extent has each of the following activities increased your knowledge of your subject area?

Professional Development Activity	Increased greatly	Increased slightly	Neither increased nor decreased
Workshops	49%	43%	7%
College Courses (face to face)	59%	34%	6%
Online courses/modules	31%	54%	15%
Conferences	46%	46%	8%
Internships	40%	37%	22%
Individual or group research project	25%	53%	22%
Instructional coaching	25%	49%	25%
Observations of other teachers' classes	36%	48%	16%
Involvement in teacher study groups	26%	52%	23%
Use of teacher resource center	18%	51%	31%
Participation on teacher committee or task force	22%	47%	31%
Completing requirements for National Board Certification	31%	41%	25%

Table 5 shows teacher ratings on the impact of the same activities (for those who participated in them) on improving instructional strategies. Again, workshops, face to face college courses, and conferences led the way, but the latter two have become less influential and internships are now comparable with conferences. Again, instructional coaching (as well as online courses/modules) didn't fare as well.

Table 5.   To what extent has each of the following professional development activities positively changed your teaching practices toward more effective instructional strategies?

Professional Development Activity	Increased greatly	Increased slightly	Neither increased nor decreased
Workshops	48%	49%	4%
College Courses (face to face)	48%	47%	5%
Online courses/modules	26%	58%	16%
Conferences	39%	52%	9%
Internships	39%	40%	21%
Individual or group research project	23%	55%	22%
Instructional coaching	26%	53%	21%
Observations of other teachers' classes	34%	55%	10%
Involvement in teacher study groups	23%	60%	17%
Use of teacher resource center	18%	51%	31%
Participation on teacher committee or task force	21%	50%	29%
Completing requirements for National Board Certification	27%	43%	28%

3. Superintendent survey results disaggregated by CCD variables and respondent demographics

As noted above under both Methods and in the introduction to the Findings, we cross-tabulated selected survey question responses by characteristics of the respondents' schools or districts, and also looked at the survey responses by certain respondent demographics. CCD variables at the district level include: district locale, total students in district, per pupil expenditure, and proportion of students qualifying for free and reduced priced lunch. The superintendent demographic variable is years working at current district. Since per-pupil expenditure was not related to responses in any of the topical areas, no presentation of analysis on this variable is given below.

Influence on Professional Development Decision-Making
As described earlier, superintendents were asked how much influence various people or groups have on their district's decision-making with regard to the development and/or selection of professional development activities. Crosstabs were then performed using this question and the CCD and superintendent demographic variables.

The majority of respondents in all four **district locales** stated that the principals or assistant principals and the teachers are "highly influential" in professional development decision-making. Superintendents in city (73.2%) and town (75.1%) districts were more likely to say school improvement plans are "highly influential" in PD decision-making compared to rural (63.9%) and urban fringe (57.8%) districts.

In districts with instructional coaching, superintendents in town and city school districts are more likely to say teachers' instructional coaches are highly influential in

PD decision-making compared to rural and urban fringe districts. Also in districts with coaching, **district size** was related to responses. Superintendents in large districts (more than 5000 students) were more likely to say teachers' instructional coaches are "highly influential" (50.8%) compared to districts with fewer students (about 41%).

The percent of **free and reduced price lunch** (FRPL) students in the district was unrelated to most superintendent responses on the issue of influence on district decision making with regard to teacher professional development. Most superintendents, no matter how long they have worked at their current district, tended to agree on who influences PD decision-making. However, superintendents with **more than 10.5 years** working at their current district are more likely to report that teachers' instructional coaches are "highly influential" (59.5%) in PD decision-making compared to superintendents with less than four years (37.8%) and 4.5-10 years (33.9%).

*Organizing and Initiating Teacher Professional Development*
Superintendents were asked who assumes the primary responsibility for organizing and initiating teacher professional development. Respondents were able to choose the district or educational service agency, the school principal or assistant principal, or the teacher. Crosstabs were then performed using this question and the CCD and superintendent demographic variables.

As for many other questions, responses varied by **district locale**. Superintendents in town, urban fringe and city districts were more likely to indicate that the district or educational service agency has the primary responsibility for organizing and initiating teacher professional development, compared to superintendents in rural districts. Not surprisingly, superintendents in **larger districts** were more likely to say that the district or ESA has primary responsibility for organizing and initiating teacher PD. The percent of **free and reduced price lunch** students in the district had a non-linear relationship with responses to this question—superintendents in districts in the low and high FRPL categories indicated greater district/ESA control of PD than superintendents in the middle FRPL category. The interpretation of this finding is unclear. **Years working** at their current district did not play a significant role in the responses that superintendents made to this question.

*Use of Instructional Coaches as part of Teacher Professional Development*
In cross-tabulations on the use of instructional coaches, a clear relation with **district locale** was seen (Figure 9). The pattern suggests that as district location changes from rural to more urban areas, instructional coaching is more likely to be used as part of teacher PD.

Figure 9.   District use of instructional coaching based on locale
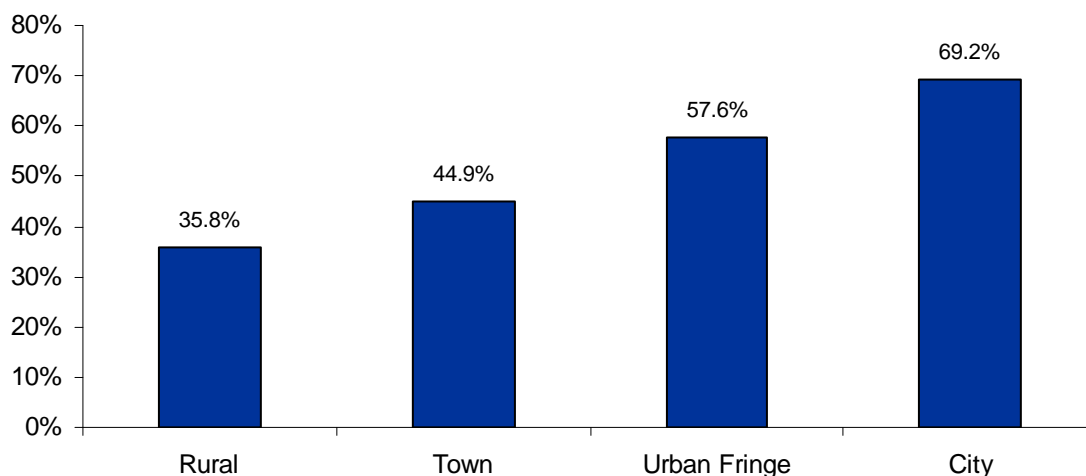
There is a similar, and undoubtedly related, finding with regard to **district size**. Superintendents in districts with more than 5000 students are more likely to indicate the use of instructional coaches as part of teacher PD (72.6%) compared to districts with 2001-4999 students (49.4%) and districts with less than 2000 students (38%). **Longevity** in the district is also related to responses to this question. Superintendents with 10.5 or more years at their current district are more likely to indicate the use of instructional coaching than superintendents with shorter tenure (Figure 10). **Free and reduced priced lunch** does not play a significant role in the responses to this question.

Figure 10.   Use of instructional coaching based on superintendent years in the district
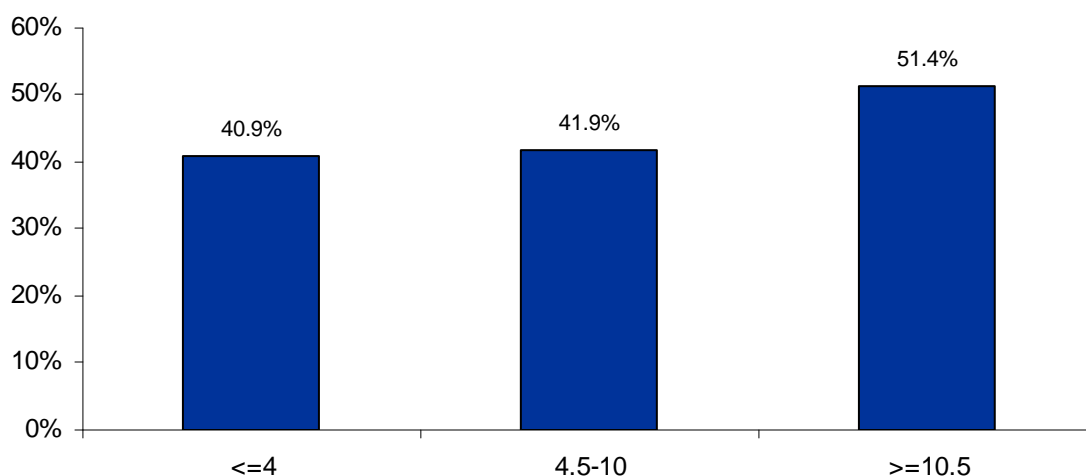
Using technology to deliver teacher professional development
Responses to this question were not strongly related to the CCD variables of **district locale**, **total students**, and **free and reduced price lunch** (FRPL). Rural districts tended to use technology for PD somewhat more than the other locales. FRPL percentage was

related to technology use in a complex way—schools in the Low and High categories used technology more than the Middle category. In terms of **superintendent tenure**, those in the mid-range (8-17 years at the district) tended to use technology for PD more than those with less fewer eight or more than 17 years experience in their district.

Support for using the Internet to Deliver Professional Development
On this issue, responses varied only by **district locale**. Size (total students), percent free and reduced price lunch, and superintendent tenure were unrelated. Town (44.2%) and rural (43.8%) superintendents were more likely to believe their district would be highly supportive of using the Internet to deliver PD, compared to urban fringe (30.9%) and city (23.8%) district superintendents.

4. Principal survey results disaggregated by CCD variables and respondent demographics

CCD variables at the school level include school locale, percent free and reduced lunch, total number of students, and per-pupil expenditure. As before, to facilitate breakdowns quantitative variables (e.g., number of students, per-pupil expenditure) were recoded into either two or three categories. Based on the different levels and distributions of these variables, the categories might not be the same for the principal and superintendent data. The principal demographic variable is years working at the current building. As before, per-pupil expenditure was not related to responses in any of the topical areas, and no presentation of analysis on this variable is given below.

Influence on Professional Development Decision-Making
School locale is related to district decision making with regard to the development or selection of PD activities in a few ways. City school districts, for instance, are more likely than the other locales to rate school boards as highly influential and less likely to rate teachers highly influential. In districts with instructional coaching, a similar relation to that seen above in Figure 9 is evident. As school location changes from rural to more urban areas, instructional coaches are more likely to be rated as highly influential.

The **size of the school**, in terms of number of students, is also related to the perceived influence of a couple of entities, and the relation is linear. The smaller the school, the more likely it is that teachers and the state education department are rated as highly influential. School size is not related to other perceptions of influence.

The percent of **free and reduced lunch** students is related to ratings of influence in a number of ways, but the relationships are complex at times. Some are linear. For example, the higher the percentage of free-and-reduced lunch students, the more likely principals are to rate the district superintendent (47.2%, 55.6%, and 61.8%) as highly influential in decision making about teacher professional development, and the less likely teachers are rated as highly influential (62.4%, 60.1%, and 41.6%). In some instances, however, the relation is not linear. For example, in schools in the middle category of FRPL, principals are more likely to rate themselves or the assistant principal

highly influential (74%) than in schools in the high (55%) and low (65%) categories. Taken together, these findings would seem to indicate that low student SES is accompanied by more centralized control of teacher professional development.

Principals' **experience** at the current building is related to influence ratings in various, often complex ways. In general, principals' ratings of "high" influence for almost all categories (superintendent, school board, school plan, etc.) are lowest for those longest in the current office. An exception is for ratings of teachers' influence, which are highest for the longest-tenured principals. Ratings of principals' own influence, interestingly, don't change with length of time at the building.

Organizing and Initiating Teacher Professional Development
The locus of control for initiating teacher PD activities is related to **school locale**, total number of students, and free and reduced priced lunch. Principals from city, urban fringe and rural locations were more likely to indicate that this was their or their assistant's responsibility (45-52%) than principals from town locations (23%). Principals from town schools are a good bit more likely to indicate that the district or educational service agency assumes the primary responsibility (about 47% to 35%).

School size also plays a role. Findings indicated that principals in schools with greater than 600 students are more likely to indicate that they or the assistant principal assume the responsibility (54.5%) than principals from schools with fewer students (43%-45%).
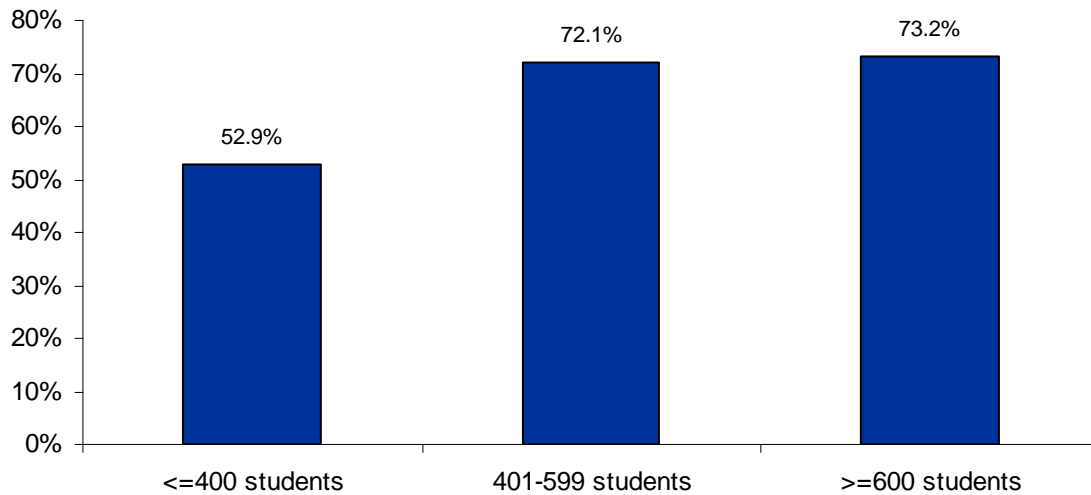
The percent of **free and reduced price lunch** students is related to perceived locus of control in the complex way that has been described before. Principals from schools in the High (45.2%) and Low (34.2%) categories of FRPL are more likely to indicate that the district or educational service agency assumes primary responsibility for teacher PD than principals from schools in the Medium category (26.9%). Again, however, this suggests more centralized control of teacher PD in schools with low SES students.

Use of Instructional Coaches as part of Teacher Professional Development
Paralleling the superintendent findings, the principal survey shows that as **school location** changes from rural to more urban areas, instructional coaching is more likely to be used as part of teacher PD. The percentages differ between the two surveys, in line with what is shown in Figure 2 above on overall use of instructional coaches (i.e., higher percentages reported by principals). Our cross-tabulation indicated the following percentages on the use of coaching as reported by principals: Rural (41.4%), Town (45.9%), Urban Fringe (67.6%), and City (82.5%).

School size is also related to principals' reporting of the use of instructional coaches for teacher professional development. The larger the school, the more likely principals are to report the use of coaches (Figure 11).

Free and reduced priced lunch is related to the use of instructional coaching in school districts as reported by principals. The relationship is linear. The larger the percentage of free and reduced price lunch students, the more likely it is that instructional coaches are used. **Principal longevity** at the current building is also related to responses on this question. Principals in the Middle category of experience (73.3%) are more likely than the Low (62.7%) or High (65.0%) categories to report that coaches are used in the school district.

*Using technology to deliver teacher professional development*
School locale in related to technology use in PD. Our findings indicated that technology is used more in the urban fringe than in other geographical locations. When asked about the proportion of the district's PD activities that use technology as a means of conveying information to teachers, principals from urban fringe schools (49.2%) are more likely than principals from rural (40.7%), and city (32.1%), and town (26.1%) schools to say that most or almost all district PD activities use technology as a means of conveying information to teachers. **Free and reduced priced lunch** is related to this variable as well. The relationship is complex as with other outcomes—Low and High categories of FRPL tend to use technology more than the Middle category. The interpretation of this is unclear.

District Support for using the Internet to Deliver Professional Development
In terms of the effect of **Locale**, our findings are as seen below in Figure 12. They indicate that principals from town locales are more likely than those from other locales, and particularly the city, to report that the school district is highly supportive of using the Internet to deliver PD content.
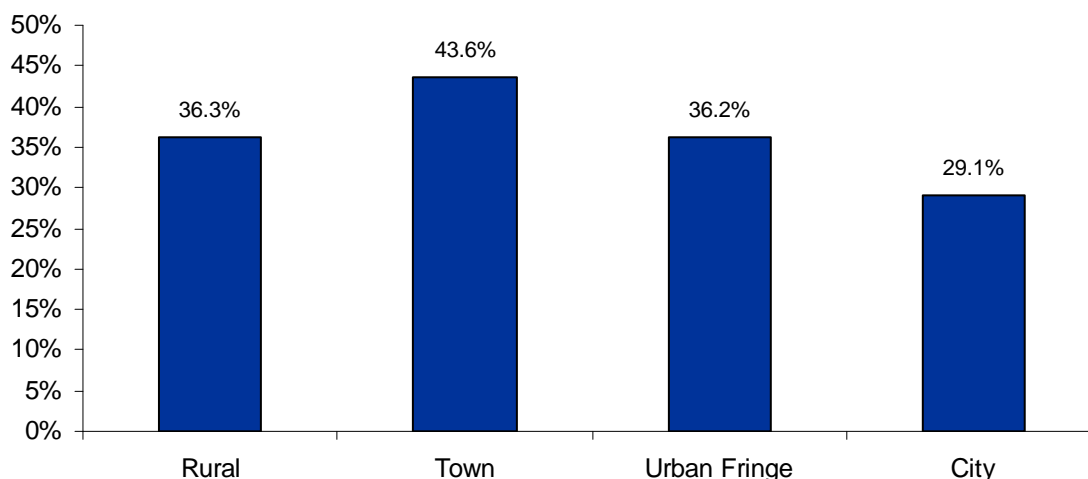
District support for technology use in PD varies among schools of different **size**. The relationship is not linear. Our findings indicated that respondents from schools in the middle category of size (43.0%) are more likely report that the district is highly supportive than respondents from schools in the smaller (27.6%) or larger categories (32.0%). **Free and reduced priced lunch** is also related to principals' perspectives of the district stance on the use of the Internet to deliver PD. Schools in the Low FRPL category are more likely to report a highly supportive district (40.6%) than schools in the Middle (30.4%) or High (32.9%) FRPL categories.

Finally, the **principals' longevity** at the current building relates to perceptions of the district's stance on the use of Internet to deliver PD. Principals with under four years experience are less likely (27.2%) than principals with four to nine years experience (39.7%) or principals with ten or more years experience (35.8%) to report a highly supportive district.

5. Teacher survey results disaggregated by CCD variables and respondent demographics

School characteristics include school locale, percent free and reduced lunch, total number of students, and per-pupil expenditure (again, all at the school level). As noted before, to facilitate breakdowns quantitative variables (e.g., number of students, per-pupil expenditure) were recoded into either two or three groups. For teachers, demographic variables included gender, years of job experience, education level, subjects taught, and grade level.

The survey questions we looked at differed to some extent with those selected in the superintendent and principal analyses. Questions included influence on current

selection of PD activities, future PD needs, funding for PD activities, learning from various PD formats, and several technology questions—interest, district use of technology to provide PD, and district support for using the Internet to provide PD.

Selection of Professional Development Activities
Under this category for the teacher survey, we group questions about the influence different people and groups have on teachers' choice of professional development activities, and about who assumes the primary responsibility for organizing and initiating teacher PD (district, principal, teacher, etc.).
School locale has an effect. Teachers in city schools (62.6%) are more likely to report that principals are "highly influential" in teachers' choice of PD activities, compared with town (32.6%), urban fringe (43.8%), and rural (47.1%) schools. Teachers in city schools are also more likely to report that principals have the primary responsibility for organizing and initiating teacher PD (36.3%) compared to urban fringe (27.5%) and town (24.7%) school teachers.

Continuing this trend, **school size** as measured by the total number of students is related to reports of influence and control. The more students schools have, the more likely teachers are to report the school principal or assistant principal as highly influential in teachers' choice of PD activities (41.5%, 45.4%, 53.1% for the small, medium, and large school groupings), and the more likely it is that teachers indicate that the school principal or assistant principal assumes the responsibility for organizing and initiating teacher PD (23.1%, 26.9%, 34.7%). There is no consistent pattern within **free and reduced priced lunch** categories regarding teachers' selection of professional development activities or their perceptions of responsibility for PD, although some differences do exist.

School level is related to choice of PD activities primarily with regard to the teachers' own reported influence. Elementary teachers are more likely to rate themselves as highly influential (57.5%) than middle school (47.4%) or high school teachers (40.1%). Otherwise, elementary and high school teachers tend to disagree with middle school teachers about the influence of people/groups on PD selection.

A **teacher's subject** did not play a significant role in determining teachers' responses regarding professional development. Teachers' **years of experience** relate to some influence ratings, sometimes in a linear fashion. For example, the more experience teachers have, the more likely they are to say the district superintendent is highly influential (21.7%, 29.0%, 36.5%) in teachers' choice of PD activities. Generally, teachers in the highest experience category (20 or more years) tended to give higher influence ratings for most entities. More experienced teachers are also more likely to indicate that the district or ESA assumes the responsibility for organizing and initiating teacher PD (37.8%, 43.4%, 51.8%), and correspondingly less likely to say that principals or teachers themselves assume this responsibility.

Teacher education is also related. Teachers with master's degrees and above are less likely to rate the school principal or assistant principal as highly influential (43.4%) compared to those with less than a masters degree (54.8%). By the same token, they are less likely to choose the school principal as the person who assumes primary responsibility for organizing and initiating teacher professional development (24.0%), compared to those with less than a master's (37.4%).

Gender is related in several instances. Generally, males report that various entities have less influence on their choices than females do. For almost all categories, females are more likely to give ratings of "highly influential." Males and females also differ in their perspective on who assumes primary responsibility for organizing and initiating teacher professional development (Figure 13). Males are more likely to indicate the district superintendent/ESA than females. Females are more likely to indicate the school principal or assistant principal than males. Males also select themselves (26.2%) more often than females (14.8%) as the one assuming primary responsibility.

Figure 13.   Gender Differences on Who Assumes Primary Responsibility for PD
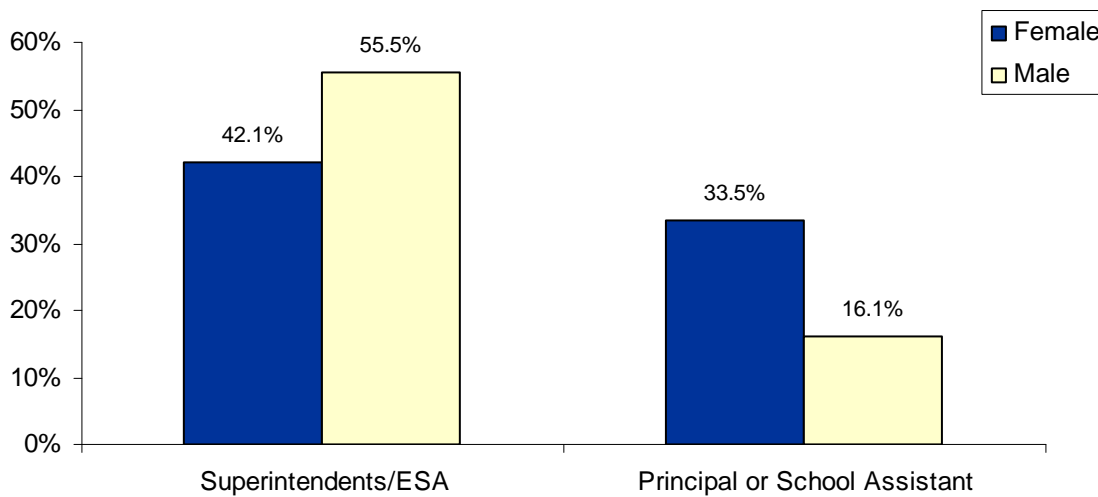
Professional Development Preferences
This analysis addresses the question of which professional development activities would best address teachers PD needs during the next two school years. Activities included workshops, college courses, online courses/modules, conferences, internships, individual or group research project, instructional coaching, observation of other teachers' classes, involvement in teacher study groups, use of teacher resource center, participation on teacher committee or task force, and completing requirements for National Board Certification. Most school characteristics (locale, size, FRPL%) had little relation to question responses. Some differences were seen according to teacher demographics.

Although there are clear differences between the responses of teachers of the three **teaching levels**, patterns vary. Elementary and middle school teachers tend to agree with each other and differ with high school teachers. Elementary (49.1%) and middle (43.7%) school teachers are more likely to believe workshops will be "highly beneficial" as opposed to 33 percent of high school teachers. Elementary (29.3%) and middle (30.2%) teachers are also more likely to believe conferences will be "highly beneficial" compared with high school teachers (20.6%). On the other hand, middle (21.4%) and high (21.3%) school teachers are less likely to believe that observing other teachers' classes will be "highly beneficial" compared with elementary teachers (31.2%).

A **teacher's subject** did not play a significant role in determining teachers' responses regarding professional development. **Teaching experience** is related to perceived benefits of some of the categories, and some relationships are linear. For example, the more experienced teachers are, the less likely they are to say that face to face college courses (35.0%, 31.5%, and 22.9%) or observation of other teachers' classes (32.5%, 26.8%, and 17.9%) are highly beneficial. Also, the more experienced teachers are, the more likely they are to say that online courses/modules (8.8%, 12.3%, 19.6%) and completing requirements for National Board Certification (22.6%, 28.0%, 47.4%) have no benefit. Other differences are less clear cut. **Education level** is not related to perceptions of value, and **gender** differences are not large.

Funding for Professional Development
Teachers were asked who provides the funding for their professional development activities. Possible responses included district, principal, department chair, and self. Few of the school or demographic variables were related to question responses.

Many teachers (40%-43% across locales) report using their own funds for PD activities, but the majority of funding for PD activities comes from the district, as reported by teachers in all **school locales**. However, a significant proportion of teachers in urban fringe (43.1%) and city (45.3%) schools report funding from their principals, compared to teachers in rural (24.6%) and town (18.1%) schools. Similarly, teachers from larger schools tended to report more principal funding of PD. The larger, more urban schools are clearly more likely to have discretionary funding at the school level for teacher PD, which will have implications for marketing of new resources directly to schools.

Technology in Professional Development Activities
Teachers were asked if they would be in interested in participating in an online activity as part of their PD, how they would characterize their district's stance on the use of the Internet to deliver PD, and what proportion of their school's PD activities use technology as a means of conveying information. School characteristics such as locale, school size, and percent free and reduced priced lunch do not play a significant role in teacher responses about technology in professional development. However, some demographic variables do.

One of these is **teaching levels**. In general, middle school teachers show more interest in and positive perceptions of technology in PD. Middle school teachers are more likely (77%) to be "interested" or "very interested" in participating in an online activity as part of their PD compared with high school (67%) and elementary (62%) teachers. A higher percentage of middle school teachers also indicate that their district is "highly supportive" of using the Internet to deliver PD. They also report a higher proportion of technology use in their school for PD delivery (47% said "most" or "almost all" compared to 33 percent for elementary teachers and 41 percent for high school teachers).

Years of teaching experience is inversely related to interest in participating in an online activity as part of professional development. The percentage indicating they were "very interested" is as follows for the three groupings: Low—33.8 percent, Medium—24.2 percent, High—17.0 percent. Veteran teachers (the "High" group) were also less likely to indicate strong support from the district for using the Internet to deliver professional development. All groups were very close on their estimations of the proportion of the school's PD activities that use technology, however. A **teacher's subject** did not play a significant role in determining teachers' responses regarding technology in professional development.

Education level (Below Masters/Masters and Above) is not strongly related to teachers' interest in online PD, their perceptions of district support for the use of the internet to deliver professional development, or the proportion of the school's PD activities that use technology. A somewhat higher proportion of the Below Masters group did express a strong interest (30%) in online PD compared to the Masters and Above group (20%). **Gender** is largely unrelated to the technology questions, although male teachers were less likely to report district use of technology in PD delivery.