12: PROFESSIONAL DEVELOPMENT

EXECUTIVE SUMMARY

SUMMARY OF RESEARCH FINDINGS

Current predominant staff development practice is limited, fragmented, and marginalized. The complexity of teaching and learning is incompatible with the narrow focus of much of traditional staff development. Evidence abounds of the significance of the relationship between the content of staff development, the quality of the staff development, and student achievement, so long as staff development adheres to certain principles that emphasize school-level control, focus on student learning and instruction, a commitment of time and resources to implement development over an extended period of time, and the development of professional development styles that engage teachers collaboratively rather than focusing on them as individuals. Effective professional development requires that continuous inquiry be embedded in the daily life of the school.

RECOMMENDATIONS

- Professional development should be viewed as an on-going part of the daily life of the school.
- More time and resources should be devoted to professional development.
- When a specific curricular or instructional initiative is being implemented in a school, training should be supplemented by coaching and the initiative should be the subject of the on-going inquiry in the school.
- The perceived relationship between professional development of any sort and teacher growth should not be left to chance. The relationship between professional development initiatives and teacher growth should be clearly articulated.
- Schools should be cognizant of the relationships between professional development initiatives and other parts of the system. Time schedules, curricular goals, student and teacher evaluation, curricular materials, and expectations must all be brought in line with the focus of professional development initiative.
- State laws mandating schools' curriculum content and school time and governing school financing should be revised to accommodate more extensive and sophisticated professional development efforts.
- Principals should be prepared to be instructional leaders not only through traditional practices such as teaching them about teacher supervision and evaluation and curricular alignment, but also by preparing them to initiate and facilitate the development cultures of inquiry in their schools.

12:Professional Development

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Professional development can be thought of as "processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they might, in turn, improve the learning of students."[1] The definition implies that staff development consists of a broad range of processes and activities that contribute to the learning of educators. However, when most educators hear the words "staff development" they associate them much more narrowly with only workshops and in-services.[2] Unfortunately, the narrow conceptions many educators have of staff development[3] mirror staff development practices in most schools and districts in the United States.

Current predominant staff development practice is limited, fragmented, one-shot or short term and pre-packaged. It occurs on the margins and is focused on "training over problem solving."[4] Specifically, most educators participate in a very limited amount of staff development. They may attend a workshop or two during the year, as well as participating in their school district's one or two annual staff development days. In all likelihood, the focus of the workshops and the staff development days are unconnected to each other. The staff development days likely are centrally-planned and either do not match the needs of most schools in the district, or consist of a smorgasbord of brief, one-hour "sit and get" presentations. The effect of such staff development efforts on teacher practice and student achievement reflects the financial and mental investment in them – minimal, at best. Judith Warren Little, the author of a number of significant staff

development studies, concludes that most traditional staff development "communicates a relatively impoverished view of teachers, teaching, and teacher development."[5]

Recent research on teaching and learning has established that teaching and learning is not a simple cause and effect relationship, but rather a complex process in which learning is co-constructed by teachers and students in a *specific* classroom context with instruction at any point in time reflecting the teacher's analysis of the various elements in play at that moment[6] – what Brown has called the "nowness" of teaching.[7] The complexity of teaching and learning is incompatible with the narrow, short-term, episodic, special-project focus of much of traditional staff development. Additionally, Little argues that the complexity of current reforms (e.g., authentic instruction and assessment, curricular integration, achieving equity) often do not lend themselves to simple skill training, but rather require professional growth cultures in schools that permit teachers to function as intellectuals rather than technicians.[8]

The focus of this literature review is to examine what are the various "processes and activities" that might "enhance the professional knowledge, skills, and attitudes of educators" and to explore their impact on teaching practice and student achievement.

PROFESSIONAL DEVELOPMENT RESEARCH

TYPES OF PROFESSIONAL DEVELOPMENT

There are many forms that professional development may take. "Training" is the traditional, and still dominant, form and includes workshops, presentations, and other types of in-service activities. Training typically includes a direct instruction/lecture component, skill demonstration and modeling, and may also include simulated skill

practice, and even workplace coaching and consultation.

Opportunities to learn that are "embedded" in the work setting are a second form of professional development. Embedded professional development includes processes such as inquiry, discussion, evaluation, consultation, collaboration, and problem solving. It may be stimulated by new roles for teachers (e.g., teacher leader, peer coach, teacher researchers), new structures (e.g., problem-solving groups, decision-making teams, common planning periods, self-contained teams), or new tasks (leading an in-house workshop, journal writing, collaborative case analysis, grant writing, curriculum writing, school improvement team membership).

Networks are a third, recently emerging form of professional development. Networks are collections of educators from across different schools who interact regularly to discuss and share practices around a particular focus or philosophy of schooling (e.g., new math standards; authentic instruction). They are held together by a typically loose organizational structure that facilitates their interaction across schools. They interact via such means as in-person sharing meetings, cross-school or cross-classroom visitations, professional institutes, critical friends groups, and electronic forms of communication. Pennell and Firestone found that networks were effective in helping teachers get students more actively involved in learning,[9] and Lieberman and Grolnick found networks to have a number of positive effects on the professional development of teachers.[10]

Professional Development Schools are a fourth, also fairly recent, form of professional development. Professional Development Schools (PDS) are schools in which university faculty, PDS teachers, and student teachers work collaboratively to enhance

the student teaching experience and to improve the professional development of the PDS teachers and staff. These goals are met through active involvement of the university faculty in the school, formal professional development experiences (e.g., teacher study groups, curriculum writing, peer observation, case conferences, workshops),[11] and through school-based collaborative research.

OUTCOMES OF STAFF DEVELOPMENT

There are several outcome areas that are potentially affected by professional development. These include:

- teacher knowledge,

- teacher attitudes and beliefs,

- teaching practice,

- school-level practice, and

- student achievement.

Professional development's impact on *teacher knowledge and skill* includes imparting knowledge about content or content standards and skills in instruction, classroom management, or assessment. Developing teacher knowledge and skill, however, is about more than acquiring existing skills and knowledge; it also includes enabling teachers to reflect critically on their practice and fashion new knowledge and beliefs about content, pedagogy, and learners.[12] Smylie[13] notes, "In order to *change practice* in significant and worthwhile ways, teachers must not only learn new subject matter and new instructional techniques, but they must alter their *beliefs* and conceptions of practice, their 'theories of action.'"[14] Guskey argues that change in *beliefs and*

attitudes occurs subsequent to change in practice, and results from teachers' observing the impact of changes in their practice on student outcomes.[15] Finally, the impact of professional development on *student achievement* should not be limited to an examination of only standardized test scores. Other measures of student achievement include teacher made exams and quizzes, students' attendance, involvement in class sessions, student motivation for learning, attitudes toward school & learning,[16] authentic assessment of student work, homework completion rates, and classroom behaviors.[17]

CHALLENGES IN STUDYING PROFESSIONAL DEVELOPMENT AND STUDENT ACHIEVEMENT

Although a great deal has been written on the topic of professional development, the empirical literature on the topic is much less extensive. This is particularly so when only studies that link professional development and student achievement are considered (see related discussion below). Indeed, much of the research empirically linking professional development to specific outcomes has not appeared in the major refereed scholarly journals, but has, as often as not, appeared in ERIC research reports, or in reports produced by school districts, foundations, or other organizations. The conceptual and theoretical work on professional development that has appeared in the major academic journals is typically thoughtfully argued and pulls from a variety of sources and bodies of knowledge (e.g., from research on adult learning) to develop arguments for specific forms of professional development.

Although the ultimate objective of professional development is improving student achievement as a result of increased teacher learning, testing the relationship between professional development and student achievement is problematic. Due to a variety of

confounding variables, there is great difficulty in establishing a direct relationship between professional development activities, improvements in teaching, and increases in student achievement.[18] This is particularly problematic when there are a variety of other "new" programs, materials, or interventions occurring simultaneously with professional development activities (which is essentially all the time in most schools). Further increasing the difficulty of testing the professional development-student achievement relationship are forms of professional development that go beyond the traditional training workshop format and are embedded in the daily life of the school (see subsequent discussion). Guskey and Sparks observe that to explore the professional development-student achievement relationship, the content ("what?"), process ("how?"), and context ("who, when, where, why?") of professional development need to be considered in the study.[19] Given that each one of these factors is likely to include multiple variables, empirically testing this relationship becomes extremely unwieldy.

Linking Staff Development and Student Achievement

Theoretically, enhancing the knowledge, skills, and attitudes of teachers should translate into improved teaching practices, which, in turn, should improve student achievement. Dennis Sparks and Stephanie Hirsh, the executive directors of the National Staff Development Council, note that "a growing body of research shows that improving teacher knowledge and teaching skills is essential to raising student performance."[20] Indeed, in a study of 900 school districts, Ferguson found that teacher expertise accounted for 40% of the difference in student achievement in reading and math.[21] A second study found that differences in teacher qualifications accounted for more than 90% of the variance in student achievement in a large urban district.[22]

It should be noted, however, that the relationship between professional development and student achievement is a function of both the quality of the professional development *processes and activities*, and the efficacy of the *substance* of the professional development (i.e., the content, skills, or attitudes that the professional development is attempting to influence). That is, professional development's impact can improve student achievement only to the extent to which its *content focus* can do so. The relationship might be portrayed as follows:

Quality of content/skill/disposition to be learned + Quality of staff development processes & activities → *Degree of change in practice* → *Impact on student achievement*

A study by Shymanksy, Yore, and Anderson provides an illustrative example.[23] Shymanksy and colleagues studied the impact of a high-quality science professional development program on teaching practice and student achievement. The professional development program included an initial problem-centered workshop, development and subsequent field-testing of science materials in participating teachers' classrooms, follow-up workshops, and sharing with colleagues – a total of 110 hours of in-service over a four-year period. While teachers changed their teaching to more regularly use the methods and objectives the professional development program advocated, student achievement in science did not improve subsequent to the professional development initiative.[24] This suggests that it is not professional development processes and activities alone that influence student achievement. Rather, it is the *content and methods* being advocated in the professional development program in combination with the *quality of the professional development processes and activities* that influence student achievement.

An alternative explanation in this case may be that the student achievement assessment strategy that was used may not have been congruent with the content and methods being advocated in the staff development program. Although some evidence exists to the contrary,[25] it is reasonable to assume that a staff development program advocating authentic means of instruction may not show an impact on student achievement when the student achievement measure being used is scores on standardized tests – which typically do not focus on testing the types of higher-level thought processes that result from authentic teaching and other constructivist-oriented learning processes.[26]

In any case, perhaps the single most comprehensive source of evidence for the significance of the relationship between the content of staff development, the quality of the staff development, and student achievement is found in *Student Achievement through Staff Development*, by Joyce and Showers.[27] The book reviews, synthesizes, and interprets research from a variety of sources: some empirical, some theoretical, and some conceptual. Joyce and Showers devote an entire chapter to exploring practices that have been empirically documented to be effective and that might serve as sources for staff development efforts geared toward improving student achievement.

WHAT WORKS IN PROFESSIONAL DEVELOPMENT

Professional development does make a difference in the quality of teaching in schools and in the achievement of students. Even given the paucity of much current professional development practice, in a national survey almost two-thirds of teachers report that professional development activities have caused them to change their teaching.[28] A second national survey found that teachers who participated in professional

development focused on standards were more likely to describe teaching in ways consistent with the standards than teachers who did not participate in the professional development activities.[29] Similarly, Cohen and Hill found that professional development that was carefully focused on particular objectives resulted in more teaching practices consistent with the objectives. Additionally, they found that the greater the amount of professional development, the more practice was influenced.[30] In a study of a long-term professional development effort, the researchers found a significant correlation between teachers' level of use of the strategies promoted by the professional development effort and students' cognitive gain (as measured by a cognitive assessment instrument).[31] Cognitive gain was also directly linked to subsequent gain in academic achievement.[32] Finally, Greenwald, Hedges, and Laine found that there is a greater increase in student achievement for money spent on professional development than for money spent on reducing class size or raising teachers' salaries.[33]

Professional Development Implications of Other Research

Research focused on other aspects of education has also produced findings with a bearing on professional development.

Professional Development and Effective Class-Size Reduction:
Wisconsin's SAGE Program

In an evaluation of a reduced class size initiative in Wisconsin, Molnar, Smith, Zahorik, Palmer, Halbach, and Ehrle found that reduced class size resulted in improved student achievement.[34] In order to analyze changes in teaching that occurred as a result of reduced class sizes, they interviewed 28 teachers who participated in the reduced-class-size initiative. The teachers noted that as a result of lower class sizes they were able to

know and understand their students better, spend less time on discipline, individualize

instruction more to meet the needs of individual students, and increase the amount of

student-centered instruction. Student-centered instruction included more hands-on

activities, more enrichment activities, more interest centers, and more cooperative groups.

The researchers concluded that the teachers did not necessarily adopt totally new teaching

practices as a result of the smaller class sizes, but rather that the lower class sizes

permitted them to more frequently use the teaching practices that they had always wanted

to use. Seemingly, the addition of professional development would be fruitful for these

teachers since large class size would not be a factor that prohibits them from

implementing newly learned practices. Indeed, many of the interviewed teachers

expressed a desire for more in-service.

Professional Development and Teacher Quality:
The Wenglinsky Study

Correlating achievement data from over 7,000 eighth graders who took the

National Assessment of Educational Progress (NAEP) Mathematics and Science exams

with data from accompanying surveys completed by their teachers, resulted in a number

of significant findings in a study conducted by Wenglinsky.[35] Survey data measured three

types of teacher quality: teacher inputs (such as education levels and years of

experience); classroom practices (such as use of small-group instruction or hands-on

learning); and professional development (such as training to support classroom practices).

Wenglinsky's study yielded the following findings.

In Mathematics:

- Of the six professional development topics in math, students whose

teachers received professional development – in working with different student populations and in higher-order thinking skills – outperformed students whose teachers lacked such professional development. Students whose teachers received professional development in ongoing forms of assessment performed worse than students of teachers who did not receive such professional development (the three topics which did not have an influence in math included classroom management, cooperative learning, and interdisciplinary instruction).

- Teachers with more professional development were more likely to engage students in hands-on learning activities. Students who frequently engaged in hands-on learning activities as well as students who were frequently engaged in activities that required higher-order thinking skills outperformed students who spent less time in such activities.

In Science:

- Of the eight professional development topics in science, students whose teachers received professional development in laboratory skills outperformed students whose teachers lacked such professional development. Students whose teachers received professional development in classroom management performed worse than students of teachers who did not receive such professional development (the 6 topics which did not have an influence in science included cooperative learning, working with different student populations, higher-order thinking skills, on-going forms of assessment, interdisciplinary instruction, and integrating science

instruction).

- As in math, students who frequently engaged in hands-on learning activities outperformed students who spent less time in such activities.

- As in math, teachers with more professional development were more likely to engage students in hands-on learning activities.

Overall, although the study found that student socioeconomic status was the single most influential measure that impacted student achievement, when the influential measures of teacher quality (i.e., professional development factors and classroom practices) were added together, they outweighed the influence of socioeconomic status (0.76 for SES, 0.86 for teacher quality inputs).

Related Findings

A study by Dunne, Nave, and Lewis[36] found that the teaching of teachers who participated in critical friends groups became more student-centered. If hands-on learning is an aspect of student-centered teaching, then an indirect link could be argued to exist between critical friends groups as a form of professional development and student achievement. (Critical Friends Groups consist of a small group of teachers who get together to "identify student learning goals that make sense in their schools, look reflectively at practices intended to achieve those goals, and collaboratively examine teacher and student work in order to meet their objectives."[37] A national Critical Friends Group initiative is being conducted by the National School Reform Faculty of the Annenberg Institute for School Reform.)

Sanders and Rivers, cited in Wenglinsky,[38] found that the top 20% of teachers boosted the scores of low-achieving students over a one year period by an average of 53

percentile points, which was 39 percentile points higher than the 14-percentile point gain experienced by students assigned to the bottom 20% of teachers.[39]

Although the research indicates that professional development can make a difference in changing teaching practice and in improving student achievement, the research is clear that these effects are more likely to occur when professional development is characterized by certain principles. The remainder of this review will discuss eight principles that emerge from the professional development literature as key to effective professional development. These principles reflect an overwhelming consensus that is found in the literature on the subject. While only a limited amount of the work on professional development is based on empirical research, most of the remaining work is nonetheless research-based[40] – the work of noted scholars who have grounded their findings in a broad synthesis and thoughtful consideration of large quantities of research and research-based literature on a variety of related topics and from a variety of fields. In the absence of more empirical research, it is the best available literature on the topic, and is well grounded in its own right.

Principle 1: **Decisions about professional development should be made within schools rather than at the district level.**[41]

There is a broad consensus in the organizational theory literature that planning that is solely top-down alienates teachers.[42] Additionally, as Little observes, there is little value in the one-size-fits-all model of staff development that exposes teachers with different backgrounds and from different schools to the same material.[43] Thus, professional development initiatives should reflect participant input.[44] Sparks, however, cautions that professional development should not be based only on the perceptions of

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educators regarding their needs, but rather should begin with an assessment of student needs and learning outcomes and work backwards to what the results of that assessment mean for staff development.[45] Little echoes this sentiment, noting that professional development must make connections between students' experiences, teachers' classroom practice, and school-wide structures and cultures.[46] Professional development has been found to be most effective when it is based on student learning goals that reflect the challenges and uniqueness of the particular school whose staff is participating in the professional development.[47] It should be driven by a "clear, coherent strategic plan" rather than being a "fragmented, piecemeal improvement effort…with no thought given to follow-up or to how the new technique fits in with those that were taught in previous years."[48]

Totally bottom-up planning, however, is also not advisable. Such planning is unlikely to engender the support of district leadership.[49] District backing is important for a number of reasons, including that research has found a degree of correlation between district backing and teachers' willingness to undertake an initiative.[50] Thus, decisions about professional development should be made within schools rather than at the district level, but planning should include participation from the district level.

Principle 2: **Professional development must be focused on instruction and student learning.**[51]

Joyce, Wolf, and Calhoun[52] note that they did not find a single instance in the literature on professional development and school improvement initiatives "where student learning increased but had not been a central goal."[53] Sparks argues that staff development must begin not with teacher or district needs and desires, but rather "with a

clear sense of what students need to learn and be able to do,"[54] and recommends that staff development be connected to assessable student learning outcomes.[55] As Elmore and Burney note: "It's about instruction…and only about instruction."[56]

To be about instruction, staff development must focus on both deeper forms of content knowledge *and* on the most effective instructional strategies in a discipline.[57] In the *National Plan for Improving Staff Development* published by the National Staff Development Council, Sparks and Stephanie Hirsh note that effective staff development must result in teachers being "deeply immersed" in subject matter and teaching methods[58] and must be curriculum-centered and standards-based. Providing empirical support, Cohen & Hill found that there were higher average student standardized test scores in schools where staff development was specifically focused on the objectives of the school improvement initiative effort (in this case, the California Mathematics Framework), and where staff development linked curriculum with assessment.[59] Using data from a 1994 survey of California elementary school teachers and the 1994 California Learning Assessment System, they found that student achievement on standardized tests improves when teachers' learning opportunities are grounded in the curriculum students study, deal with the connections between multiple elements of the instructional system (e.g., curriculum, instruction, *and* assessment), and occur over an extended time period.

Principle 3: Professional development initiatives must take place over an extended period of time.[60]

As we know from research and practice, change is a long, slow process.[61] If the objective of professional development is change in teaching practice, then it is clear that professional development must be sustained over time if change is to be realized. Sparks

and Hirsh note that professional development should be "sustained, rigorous, and cumulative."[62] The importance of professional development extending over a period of time is also supported by empirical research. The National Center for Education Statistics found that teachers who participated in staff development programs that lasted eight hours or more were three to five times more likely to report that the staff development had significantly improved their teaching than teachers who participated for lesser amounts of time.[63] Cohen and Hill found that there were higher average student standardized test scores in schools where teachers received a greater amount of staff development than in schools where teachers received a lesser amount of professional development.[64]

Principle 4: Professional development activities should model effective pedagogy.[65]

Little observes that professional development must offer "meaningful intellectual, social, and emotional engagement with ideas, with materials, and with colleagues…"[66] This, in a nutshell, summarizes effective pedagogy. More specifically, modeling effective pedagogy in professional development includes two primary components: professional development must be consistent with what we know about constructivist teaching and learning, and professional development must follow the principles of adult learning. Constructivism holds that learners connect new information to their existing knowledge in order to create new knowledge.[67] This is in contrast to merely having knowledge transmitted from someone else to them. Constructivist staff development might encompass activities such as "action research, conversations with peers about the beliefs and assumptions that guide their instruction, and reflective practices (e.g., journal keeping)."[68] Principles of adult learning include learning in varied settings and

circumstances; problem-oriented learning that relates to the adult learners' lives; adult learners playing an active role in their own learning; and connecting new learning to the adults' existing knowledge, skills, and beliefs from past experiences (also a key aspect of constructivism).[69]

Principle 5: **Professional development workshops must be supported by modeling and coaching in order to attain a higher degree of effectiveness.**[70]

Implementation of practices advocated in staff development workshops is most effective when professional development includes both staff training activities and staff support activities. Guskey notes that few teachers can go from workshop to practice without experimentation, classroom-based modeling, and other follow-up support.[71] Additionally, teachers must be helped to endure and persist past the anxiety of initial failures.[72]

Research has found that when they were well conducted, workshops combined with coaching and related follow-up support produced sustained student achievement gains and teacher adherence to project methods and objectives. By contrast, training alone produced only short-term achievement gains, there was less fidelity in implementation to project objectives, and adherence to project methods did not persist. The types of related follow-up support that led to desirable outcomes included local resource personnel to assist teachers with project implementation, outside consultants, and regular project meetings that included teachers, were collaborative, and focused on collective problem-solving and sharing of expertise.[73]

Joyce and Showers found that a "dramatic increase of transfer in training…occurs when in-class coaching is added to an initial training experience comprised of theory

explanation, demonstration, and practice with feedback."[74] They found that acquiring new skills requires understanding the theoretical base of the skill, viewing numerous demonstrations (they suggest about 20), practicing the skills with feedback, and receiving on-the-job coaching.[75] Similarly, Joyce, Wolfe, and Calhoun, assessing several bodies of research as well as their own extensive experience as staff developers, argue that staff development initiatives require 10 to 15 days of training (rather than the one or two days of training that are typically provided), about 20 demonstrations of the strategies to be learned, workshop opportunities to practice, and a redesigned workplace that supports the new initiative, in order to be effective.[76]

Principle 6: Professional development should focus on communities of practice rather than on individual teachers.[77]

Traditionally staff development efforts are an individual endeavor. Often, a teacher uses a professional day to attend a workshop in which she or he is interested while teacher colleagues remain at the school to fulfill teaching responsibilities. Where a workshop is offered to an entire school, each teacher typically retreats to his or her classroom afterward to implement the new practices in isolation. Unfortunately, teachers, over time, have tended to think in terms of only their classrooms and their students. Such traditional perspectives and professional development practices fail to recognize the significance of collective and interdependent effort and effect.[78] Sparks, drawing conclusions from his long experience as director of the National Council of Staff Development and as editor of the *Journal of Staff Development*, notes that a paradigm shift is needed in staff development that requires a movement from individual development to individual development *and* organizational development.[79] He argues that

the success of students depends not only on the learning of individual adults in the school, but also on the capacity of the school "to solve problems and renew itself."[80]

Arguing largely from case studies (which, given the complexity of studying the impact of professional development, may often be the more appropriate methodology than more quantitative research), Little and colleagues echo this sentiment, asserting the necessity of considering professional development in school-wide institutional terms.[81] Similarly, Elmore and Burney observe that, "Deep and sustained change requires that people feel a personal commitment to each other" and that instructional improvement as a result of professional development is not "a collection of management principles" but rather the development of "a culture based on norms of commitment, mutual care, and concern."[82]

Research supports the opportunity to work together and learn from each other as one of the most effective forms of professional development.[83] For example, Stein observed that in the New York City schools professional development effort she studied, teachers returned to their school after collectively attending an off-site workshop, engaged in conversations with other teachers about the practices on which the workshop focused, and observed each other teaching using the practices. The result, she found, created a "community-based expectation that they would implement the newly-learned practices in their daily work."[84] Stevens found that of six professional development strategies, teachers cited collaboration and networking as the most helpful to their professional development, noting that this permitted them to share their best practices and benefit from those of others.[85] Although the study did not prove a direct empirical link, test scores improved in the schools that were subjected to the professional development

strategies. By contrast, participants in school renewal work in New York City's District 2 cited isolation as "the enemy of instructional change."[86] Little found that working collaboratively is important not just in training, but also in implementing new initiatives.[87] In a study of two schools, each of which experienced a similar, highly-rated staff development program, the difference between the school that effectively implemented the initiative and the school that was unsuccessful in doing so was that the successful school continued to work collaboratively during the implementation process, while in the less successful school teachers worked individually during the implementation process. The successful school committed to a three-year implementation process, rather than simply to five to eight days of training, and developed habits of shared work and problem-solving during the implementation process. Additionally, the principal became a fully involved, proactive change agent, rather than simply permitting or approving the change.

<u>Principle 7:</u> Effective professional development requires that continuous inquiry be embedded in the daily life of the school.[88]

This principle, perhaps more than any other, reflects the paradigm shift that is necessary (and is occurring in some quarters) in professional development. The paradigm shift requires a move away from the traditional staff development "adult pull-out" model in which staff development is an "event" that occurs primarily at a site away from teachers' workplace (usually in a workshop), to thinking of professional development as something that is embedded in multiple ways in the daily life of the school (e.g., through action research, school-based study groups, peer observation, coaching, journaling, involvement in school improvement processes, joint lesson planning, collective problem-

solving, collaborative critiquing of students' work, or collective student-oriented case conferences).[89] Sparks and Hirsh note: "In a learning school, all staff members are engaged in sustained, intellectually rigorous study of what they teach and how they teach it."[90] Smylie observes that schools will not improve "until we acknowledge the importance of schools not only as places for teachers to work but also as places for teachers to learn."[91]

Research indicates that school cultures in which inquiry is prevalent are characterized by norms of collegiality, openness, and trust; opportunities and time for disciplined inquiry; reconstruction of leadership roles; and networking and collaboration.[92] Shared work, shared problem-solving, mutual assistance, and teacher leadership in curriculum and instruction are the cornerstones for building such a culture of inquiry in a school.[93] Indeed, Deborah Meier, former director of the highly acclaimed Central Park East Secondary School in New York City, observes in writing about the school, "continuing dialogue, face to face, over and over, is a powerful educative force. It is our primary form of staff development." [94]

Collaborative, school-wide forms of inquiry-oriented professional development increase teacher learning and change schools more than simply attending workshops or in-services.[95] Little found that when teachers observed each other in classrooms, had time to talk about their teaching, and worked collaboratively to find solutions for problems, their professional lives were "transformed."[96]

Little's study was based on interviews with 105 teachers and 14 administrators and included extensive operation of both average-achieving and "high success" schools. The latter, she found, were characterized by a norm of collegiality that encompassed an

expectation for shared discussion and shared work among teachers. High success schools were also characterized by a norm of experimentation in which continuous improvement as a result of analysis, evaluation, and experimentation was an expectation. In the high success schools, teachers engaged in frequent and continuous talk about teaching practice, in frequent and mutual observation and critique of teaching, evaluated teaching materials together, and taught each other how to be better teachers through such practices as being instructors for school-based in-services.

Little later concluded that the power of professional development lies less in the opportunities it provides teachers to *consume* research and knowledge and more in the capacity it develops for teachers to "*generate* knowledge and to *assess* the knowledge claimed by others." [97]

In a study of 78 schools, Rosenholtz found that in the 13 schools classified as effective and progressing, teachers learned from one another as well as from outside sources.[98] Improvement in teaching was "a collective rather than individual enterprise, and…analysis, evaluation, and experimentation in concert with colleagues are conditions under which teachers improve."[99]

Among specific inquiry-oriented practices, Larson et al. found that *action research* was an effective, but time-consuming, form of professional development that resulted in teachers generating new knowledge in their self-selected area of inquiry, and changing their teaching practices.[100] Dunne and Honts reported that participants in *critical friends groups* cited their participation in the groups as the most powerful form of professional development they had ever experienced.[101] The groups consisted of faculty and administrators working collaboratively toward agreed upon student learning goals

and meeting at least once a month for two hours. During the meetings they discussed teaching practices that would help them move closer to their goals, examined curriculum and student work, and identified school culture issues that could affect student achievement. In still another study, 52% of teachers who participated in weekly *common planning sessions* subsequent to professional development workshops believed the staff development significantly improved their teaching, while only 13% of the teachers who occasionally participated in collaborative planning sessions reported staff development as significantly improving their teaching.[102]

In summary, a school wide "press" for daily learning and on-going inquiry is important for teachers to access the potential power of professional development to impact their practice and improve student achievement.

Principle 8: Principals and other school leaders must provide proactive support for professional development and the initiatives upon which it is focused.[103]

Many of the decisions and structures that create support for professional development are within the control of school leaders.[104] The norms and expectations that are held for professional growth and the extent to which a culture of inquiry develops in a school are directly related to the words, actions, and decisions of principals and to the structures they develop in the school. Reitzug and O' Hair, for example, found that even actions such as the structures principals create for teachers to share with colleagues the substance of workshops that they have attended affects the culture of inquiry that develops in a school.[105] Additionally, they found that when principals went beyond simply letting teachers participate in a professional development initiative to actually being proactive supporters of the initiative, the initiative was much more likely to be

successfully implemented in the school. Stein describes the practices of three principals who created supportive structures to facilitate cross-grade collaboration.[106] The principals' actions included creating multi-grade classrooms; hiring a resource teacher to identify interdisciplinary, cross-grade curricular themes; and initiating cross-grade curriculum articulation conferences.

Supportive school structures should focus on providing ways for teachers to get feedback on their performance, to communicate with colleagues, and to move outside the isolation of their classrooms to share practices, observe other teachers, and communicate with professional colleagues.[107] Little found that the successful schools in her study created support structures (e.g., teaming, schedules, room assignments, faculty meeting agendas, governance structures) that provided teachers with common space and time and permitted them to work with each other.[108] Cross-school networks, mentioned previously, are one increasingly popular structure that facilitates these practices intentionally across schools and unintentionally within schools.

RECOMMENDATIONS

In addition to the self-evident policy recommendations suggested by the principles of professional development discussed in this review, the following policy recommendations are implied by the research that has been reviewed.

- Professional development should be viewed as an an-going part of the daily life of the school, whether or not a specific initiative is being implemented.

- More time and resources should be devoted to professional development. Current school structures and schedules include little time for in-school

collaboration, inquiry, and discourse.

- When a specific curricular or instructional initiative is being implemented in a school, training should be supplemented by coaching and the initiative should be the subject of the on-going inquiry in the school.

- The perceived relationship between professional development of any sort and teacher growth should not be left to chance. The biggest motivation for teachers to participate in and implement professional development initiatives is their perception that they will grow professionally and that their students will benefit.[109] Consequently, the relationship between professional development initiatives and teacher growth should be clearly articulated.

- Schools should be cognizant of the relationships between professional development initiatives and other parts of the system.[110] Time schedules, curricular goals, student and teacher evaluation, curricular materials, and expectations must all be brought in line with the focus of professional development initiative,[111] and the initiative should be consistent with the school's values and beliefs. For example, professional development focused on constructivist teaching makes little sense if there is concurrent pressure to teach-to-the-test as a result of a high-stakes testing environment.

- State laws mandating schools' curriculum content and school time and governing school financing should be revised to accommodate more extensive and sophisticated professional development efforts.

- Principals should be prepared to be instructional leaders not only through

traditional practices such as teaching them about teacher supervision and evaluation and curricular alignment, but also by preparing them to initiate and facilitate the development cultures of inquiry in their schools.

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